Examining the Effects of Satisfaction with Healthcare Providers on the Sexual Risk Behaviors of African American Women living with HIV/AIDS

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Dedications

I would like to dedicate this dissertation to my husband, Gamal, the biggest benefit of my life. This dissertation could not have been completed without your patience and sacrifice. You have played so many roles throughout this entire process including being my friend, my advocate, my technical support person, and my counselor. You provided me the space and time to be able to do this and constantly sacrificed your own needs and desires. It takes a strong and secure man to be able to do that. Thank you for having the wisdom to know when to provide affection and when to give me tough love. Thank you for all of your words of wisdom, your encouragement, for always reminding me of how strong I was, for loving me, and for providing me with everything that I needed throughout this emotional rollercoaster. I am so fortunate to have you as my husband and I am looking forward to a new chapter in our life together.

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Abstract

Examining the Effects of Satisfaction with Healthcare Providers on the Sexual Risk Behaviors of African American Women living with HIV/AIDS

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African American women are disproportionately affected by HIV/AIDS and account for 64% of women living with HIV/AIDS in the United States (CDC, 2005a). Unsafe sexual practices of HIV positive women can put them at increased risk of infection with sexually transmitted infections (STIs) that can intensify their HIV related symptoms and put partners at risk for secondary transmission. National policies have sought the assistance of healthcare providers (HCPs) to engage HIV positive patients in reducing their risky sexual behaviors since HCPs have proven to have success in reducing risk behaviors of HIV positive patients. Further, satisfaction with healthcare providers (HCPs) has proven to be a predictor of behavior and health outcomes among HIV positive patients (Burke-Miller et al., 2006). To date, virtually no studies have examined the influence of HIV positive patients' satisfaction with HCPs on sexual risk behaviors. Given the disparities of HIV/AIDS among African American women, it is important to know the impact of their satisfaction with their HCPs on reducing risky sexual behaviors.

Thus, this dissertation conducted a secondary data analysis to examine the effect of satisfaction with HCPs on condom use behaviors of African American women living with HIV/AIDS. This study analyzed quantitative data from a predominantly low-

income sample of 157 African American women with HIV/AIDS who ranged in age from 20 to 70 (M = 39.85; SD = *8.72*) who participated in *Protect and Respect*, a sexual risk reduction program for women with HIV/AIDS. This study sought to test the following hypotheses: (1) participant characteristics (e.g. communication with HCPs, CD4 count, viral load, etc.) had an impact on satisfaction with HCPs and (2) satisfaction with HCPs had an influence on condom use behaviors. The study found high levels of satisfaction with their HCPs among the sample. The study also found that participants reported communication with their HCPs about very personal and stigmatized topics including sex, condom use, and transmission of HIV. However, the study did not find any significant relationships between participant characteristics and satisfaction with HCPs ($p>.05$). The study also did not find significant relationships between satisfaction with HCPs and condom use ($p>.05$).

CHAPTER 1: INTRODUCTION

Statement of the Problem

In the United States, HIV/AIDS is a major health crisis among African Americans. At all stages of HIV/AIDS—from infection with HIV to death from AIDS—African Americans are disproportionately affected compared with members of other races and ethnicities. Although African Americans make up only 12% of the U.S. population (U.S. Census Bureau, 2005), they accounted for 49% of all HIV/AIDS cases diagnosed in 2005 (CDC, 2007b). In 2003, African Americans accounted for 55% of deaths due to HIV and their survival time after an AIDS diagnosis is lower on average than it is for other racial/ethnic groups (CDC, 2007b). Moreover, African American males and females represent the largest percentages of HIV/AIDS diagnoses in every age group (CDC, 2006b).

Women of color, particularly African American women, are drastically affected by HIV/AIDS (CDC, 2007a). In 2005, African American women represented 66% of new AIDS cases among women (CDC, 2007a). African American women represented more than a third (35%) of AIDS cases diagnosed among Blacks (Black men and women combined) in 2005 (Kaiser Foundation, 2007). The disparity of HIV infection is severely experienced by African American women who account for 64% percent of women living with HIV/AIDS (CDC, 2005a). Further, AIDS is the leading cause of death among African American women, ages 25-34 and among the top three causes of death of African American women, ages 35-44(CDC, 2002). These alarming disparities demonstrate the urgent need for prevention programs tailored specifically for African American women who face complex health challenges.

Specific Aims

With the continuing rise of HIV infection in the United States and the increase of sexual behavior among HIV positive individuals, there has been a recent shift in national HIV/AIDS prevention policies (Gerbert et al., 2006). In April 2003, the Centers for Disease Control and Prevention (CDC) launched a new initiative, *Advancing HIV Prevention: New Strategies for a Changing Epidemic* (Janseen et al., 2003). The guidelines called for the assistance of medical providers in delivering prevention messages to their patients. HCPs are in a unique position to engage HIV positive patients in reducing their risky sexual behaviors. The average number of outpatient visits for HIV patients is 10.7 per person in a year (Network, 2002). Additionally, many HIV positive patients seek information from providers beyond mere management of medications. The continuous nature of relationships between providers and patients allow multiple opportunities for prevention messages to be delivered during visits.

In recent years, research has shown that HIV positive patients and their HCPs have had strong, enduring relationships (Gerbert et al., 2006). A growing body of literature suggests that there are positive effects of patient satisfaction with HCPs on the health outcomes of HIV positive patients. Although satisfaction with healthcare providers among HIV positive patients is associated with adherence to antiretroviral therapy (Roberts, 2002; Schneider, Kaplan, Greenfield, Li, & Wilson, 2004), satisfaction with HCPs has rarely been examined in relation to sexual risk behaviors. Only one published study (Gerbert, Love, Caspers, Linkins, & Burack, 1999) has investigated the effect of satisfaction with HCPs on HIV positive patients' sexual risk behaviors. Although this study suggested potential associations between patients' satisfaction with their HCPs and sexual risk behaviors, the majority of the participants in this study were men and it did not discuss which sexual risk behaviors were reduced. More comprehensive research is

needed to address the possible impact of satisfaction with HCP on HIV positive patients' sexual risk behaviors. Given the disparities of HIV/AIDS infection among African American women; information on their experiences with HCPs may prove to be vital to their health outcomes if satisfaction is shown to have an impact on their sexual risk behaviors.

The goal of this dissertation was to use quantitative methods to examine whether satisfaction with HCPs has an impact on African American HIV positive women's sexual risk behaviors (i.e. condom use). This study consisted of a secondary data analysis of 157African American HIV positive women who participated in the *Protect and Respect Program*. *Protect and Respect* was a sexual risk reduction program for HIV positive women who were patients of the Partnership Comprehensive Care Practice (PCCP), the largest HIV primary care practice in Philadelphia, PA**.** The specific aims of this study were to assess:

1) whether satisfaction with HCPs has an impact on sexual risk behaviors (e.g. condom use) among African American living with HIV/AIDS
2) whether participant characteristics (e.g., communication with HCPs, illegal drug use, CD4 count, viral load , etc.) influence satisfaction with HCPs;
3) whether participants characteristics influence sexual risk behaviors (e.g. condom use) among African American women living with HIV/AIDS
4) whether satisfaction mediates the relationships between participant characteristics and condom use.

Research Significance

The goal of this dissertation was to enhance the understanding of relationships between African American HIV positive women and their HCPs. Findings will contribute to a limited body of knowledge on the influence of satisfaction with HCPs on the sexual risk taking behaviors of African American women living with HIV/AIDS. Also, findings can assist HCPs with knowledge that can enhance their relationships with African American women living with HIV/AIDS.

CHAPTER 2: BACKGROUND AND LITERATURE REVIEW

HIV/AIDS in the United States

The Center for Disease Control and Prevention (CDC) estimated that in 2003 there were 1-1.2 million individuals residing in the U.S. who were infected with HIV (CDC, 2005a). Evident disparities exist in terms of the populations who are most affected by HIV/AIDS. Of people diagnosed with AIDS in 2005, 49% are non-Hispanic Black, 28% are non-Hispanic White, 21% are Hispanic, 1% are Asian/Pacific Islander, and less than 1% are American Indian/Alaska Native (CDC, 2007a). Since the introduction of Highly Active Antiretroviral Therapy (HAART) in 1996 (CDC, 2007b), death from AIDS has significantly decreased and people infected with HIV are living longer and healthier lives. However, mortality rates from HIV/AIDS are extremely high among African Americans. In 2003, African Americans accounted for 55% of deaths due to HIV and their survival time after an AIDS diagnosis is lower on average than it is for other racial/ethnic groups (CDC, 2007b).

Of the 40,000 new annual cases, women continue to be disproportionately affected by HIV/AIDS (Lindegren, Byers, & Thomas, 1999). The pattern of HIV transmission has dramatically changed since the beginning of the HIV epidemic in the U.S. Initially, very few women were diagnosed with HIV/AIDS and most of the women who were HIV positive were infected through intravenous drug use. In 1994, heterosexual transmission outpaced injection drug use as the leading cause of infection in women (CDC, 2006c). The proportion of adolescent and adult women with HIV/AIDS has quadrupled from 7% in 1985 to 27% in 2003 (CDC, 2007a). Today, more than one quarter of all new HIV/AIDS diagnoses are among women (CDC, 2007a). Although deaths from 1993 to 2003 among people with AIDS dropped 66% for men,

the decrease among women was only 23% (CDC, 2001). Mortality rates among women are extremely high; HIV infection was the 5th leading cause of death among all women aged 35 to 44 (CDC, 2007b). However, among all racial/ethnic groups, HIV/AIDS has had the most devastating impact on African American women. HIV is the leading cause of death among African American women, ages 25-34, and among the top three causes of death of African American women between the ages of 35 and 44 (CDC, 2007b).

Women are at an elevated risk for HIV infection from some risk factors that are under their control and some that are not. In terms of biological susceptibility, a woman is significantly more likely than a man to contract HIV infection during vaginal intercourse (CDC, 2007a). This is because the lining of the vagina provides a large area of potential exposure to HIV-infected semen. Also, the presence of certain sexually transmitted infections (STIs) can increase one's chances of becoming infected with HIV (National Institute of Allergy and Infectious Diseases, 2006). This is partly due to physical changes caused by STIs, including genital lesions that can serve as an entry point for HIV. Further, women who are poor are at a higher risk of HIV infection. According to the HIV Cost and Services Utilization Study (HCSUS), women with HIV are disproportionately low income; approximately 64% had annual incomes below $10,000 compared to 41% of men (Bozzette, 2000). Kalichman and colleagues (2000) noted that trading sex for survival needs and being exposed to limited sexual and social networks increases the risk of HIV infection among poor women.

HIV/AIDS among African American Women

The disproportionate rates of HIV among African American women reveal the links between racial, gender, and socioeconomic disparities for this population. HIV diagnoses rates for African American women are higher than rates for all men except for Black men (CDC, 2006). The AIDS diagnosis for African American women is 24 times the rate for White women and 4 times the rate for Hispanic women (CDC, 2007b). Most African American women have been infected with HIV from heterosexual transmission, followed by injection drug use (CDC, 2005a). Risk factors for infection include not being aware of their male partners' risk behaviors for HIV infection, including unprotected sex with multiple partners or injection drug use (CDC, 2005a). Risk behaviors that place African American women at risk for HIV infection are lack of condom use and minimal partner negotiation skills.

Although the use of condoms can reduce the risk of HIV, a significant proportion of African American women have reported that they do not use condoms consistently or correctly (Margillo & Imahori, 1998). In a study of condom use among African American women, participants with steady partners were three to four times more likely to never use condoms when compared to women with causal partners (Wingood & DiClemente, 1998). In the same study, women with partners who disapproved of condom use were three and a half times more likely to never use condoms (Wingood & DiClemente, 1998).

In summary, behaviors of African American women and the unknown behaviors of their partners' place them at elevated risk for HIV infection. The rates of HIV infection reveal the urgent need to understand the factors that encourage safer sex behaviors of African American women. In light of recent research demonstrating that satisfaction with HCPs can have a

positive effect on promoting health behaviors of patients (Gerbert, Love et al., 1999; Roberts, 2002), it is likely that satisfaction with HCPs may have an impact on HIV positive African American women's safer sex behaviors.

Prevention for Positives

Historically, prevention programs have focused on people who are HIV negative. Prevention programs for the most part were developed to keep people who were HIV negative from acquiring HIV. However, once HAART became available, significant numbers of HIV positive individuals were able to live longer and healthier lives (Auerbach, 2004). With more HIV-infected people living longer and some engaging in risky sexual behaviors, public health messages for HIV positive individuals have become increasingly important. As a result, prevention of transmission among persons living with HIV/AIDS—often called "Prevention with Positives" (PWP)—has recently become an important area of public health initiatives (Gandelman & Rietmeijer, 2004).

The reality is that people living with HIV continue to be sexually active after their diagnoses (Bova & Durante, 2003). As long as they continue to have sex, there is a chance that their partners may become infected. Although a majority engage in safer sex practices, a considerable number of HIV positive individuals engage in risky sexual behaviors (Crepaz & Marks, 2002). Unsafe sex practices not only put partners at risk for secondary transmission but also put HIV positive people at risk for contracting STIs (e.g., syphilis, gonorrhea, herpes virus) that may accelerate HIV disease (Balzquez, Madueno, Jurado, Fernandez-Arcas N., & Munoz, 1995; Fleming & Wasserheit, 1999).

Increasing rates of risky sexual behavior among HIV-positive individuals prompted federal agencies to increase financial support for the development of prevention programs for people living with HIV (CDC, 2004). In 2003, the CDC significantly modified its HIV prevention policies to emphasize reduction of risky behaviors among HIV positive individuals. One of the new recommendations called for the integration of HIV prevention interventions into primary care settings to address the barriers faced by people living with HIV (CDC, 2003). In 2003, the Health Resources and Services Administration (HRSA) funded 15 clinical sites to address the need for interventions designed for HIV-positive individuals in clinical care. The clinical setting provides a unique opportunity for HCPs to reach people living with HIV (Teti et al., 2007) because many HIV positive patients seek information from their providers beyond the management of their medications solely (Mayer, Safren, & Gordon, 2004). For example, a number of research studies have revealed associations between satisfaction with HCPs and medication adherence among HIV positive individuals (Burke-Miller et al., 2006; Heckman, Catz, Heckman, Miller, & Kalichman, 2004; Roberts, 2002). It is also likely that satisfaction with HCPs may have an influence on other health behaviors of HIV positive patients. This notwithstanding, many researchers have not examined the effect of satisfaction with HCPs on HIV positive women' sexual risk behaviors, an oversight that this study addressed.

Risk Behaviors

Sexual Behavior

Prevention programs that address sexual risk behaviors are becoming more important for HIV positive women who are living longer due to the availability of antiretroviral treatment. Having a sexual life after an HIV diagnosis is normal and to be expected; the concern for public

health officials is whether HIV positive women are engaging in safe sex practices. Recent studies show that HIV positive and negative women share the same level of risky sexual practices (Whyte & Dawson, 2001). The key difference between HIV positive and negative women is that unsafe sexual intercourse places women who are already positive at risk for STIs that can further exacerbate their virus. Also, partners and fetuses are at risk for secondary HIV transmission.

Research on the condom use behaviors of HIV positive women varies slightly with reports of HIV positive women's unprotected sex ranging from 42% (S. Kalichman, 1999) to 49% (Bova & Durante, 2003). Although antiretroviral medications are helping HIV positive women live longer, some women have reported beliefs that their treatment reduces the risk of HIV transmission (Wilson & Kaplan, 2000). Prevention programs for HIV positive women are critical for helping women learn how to protect themselves from negative health outcomes such as STIs and to prevent partners and fetuses from becoming infected with HIV.

As important as it is for women living with HIV/AIDS to practice safer sex, many women with HIV are dealing with multiple life stressors that can inhibit their ability to negotiate condom use with partners successfully. The sexual risk behaviors of HIV positive women are complicated by poverty, substance abuse, violence, and psychological distress (Barkan, 1998; S. Catz, Gore-Felton, & McClure, 2002; Lightfoot et al., 2004). For example, many HIV positive women do not disclose their HIV status to partners because of their fears of rejection, emotional suffering, and violence (Gielen, McDonnell, Burke, & O'Campo, 2000; Siegel, Lekas, & Schrimshaw, 2005). HIV positive women need assistance in tackling these barriers in order to be able to engage in safer sex practices. With the new CDC (2003) recommendations, HCPs are now providing risk reduction messages to help reduce risky sexual practices of their HIV positive patients.

Since African American women living with HIV/AIDS face a number of barriers to participating in safer sex, providers may need to implement individualized approaches to assess risk behaviors and appropriate interventions to promote safer sexual practices (Mayer et al., 2004). Moreover, since satisfaction with health care can be a positive predictor of patient behavior (Burke-Miller et al., 2006), a HCP's ability to elicit satisfaction from African American women living with HIV/AIDS may be as important as that provider's dissemination of safer sex information. To date, a limited number of studies have examined the influence of HIV positive patients' satisfaction with HCPs on their sexual risk behaviors.

Sexually Transmitted Infections

There is a high prevalence and incidence of STIs among people living with HIV (Capps, Peng, & Doyle, 1998; Capps., Peng., & Doyle., 1998; Kissinger, Clark, & Dumestre, 1996). For example, women who are HIV positive are at an increased risk for Human papillomavirus (HPV), genital warts, and cervical cancer (Clifforda, Goncalvesa, & Franceschia, 2006) which can result in death if not diagnosed early enough (Clifforda et al., 2005; DalMaso et al., 2003; Frisch, Biggar, & Goedert, 2000; Mbulaiteye et al., 2006). STIs also exacerbate HIV disease by exposing women to the risk of co-infection with multi-drug resistant strains of HIV (S.C. Kalichman, Rompa, & Cage, 2000) that can hasten progression to AIDS (Markowitz et al., 2005). Also, partners are at risk of becoming infected with STIs including HIV since HIV positive individuals who are infected with STIs have a greater chance of spreading HIV as well as STIs (Fleming & Wasserheit, 1999).

Substance Use

Substance use is another behavior that poses detrimental health risks for HIV positive women. Many women in the U.S. become infected with HIV as a result of drug use. Approximately 1 in 5 new HIV diagnoses for women are related to injection drug use (IDU) (CDC, 2006a). Among African American women, IDU is the second leading cause of HIV infection (CDC, 2007a). Elevated rates of HIV transmission are found among women because substance users are more likely to engage in high-risk behaviors such as unprotected sex when they are under the influence of drugs or alcohol (CDC, 2005). Substance use also occurs at high rates among HIV-positive individuals (Burnam, Bing, & Morton, 2001; Lucas, Cheever, Chaisson, & Moore, 2001)for whom the effects of substance use can be especially dire. For example, a recent study found that HIV-infected women who used drugs were less likely than those who did not to report not taking their antiretroviral medicines exactly as prescribed (Sharpe, Lee, Nakashima, Elam-Evans, & Fleming, 2004). Non-adherence to medications can have grave consequences for HIV positive individuals including the exacerbation of HIV related symptoms or the development of drug-resistant strains of HIV (Abel & Painter, 2003).

The danger of substance use among HIV positive women is that it can increase their participation in risky sexual behavior. For example, HIV-positive individuals who are not in treatment for substance abuse are more likely to engage in unsafe sexual practices than are those receiving treatment (King, Kidorf, Stoller, & R.K., 2000; Laine et al., 2001), thus increasing their risk of becoming infected with STIs. Additionally, unsafe injection practices may put HIV-positive individuals at risk of acquiring a drug-resistant strain of HIV or Hepatitis C (Gerbert et al., 2006) both of which can exacerbate the virus.

Sexual practices of HIV positive women, particularly if they abuse drugs, put them at increased risk of infection with STIs that can intensify their HIV related symptoms. The multiple barriers that HIV positive women encounter to participating in safer sex practices demonstrate their need for enhanced support in adopting safer sex practices including from their HCPs. Although satisfaction with HCPs has been shown to have a positive impact on health behaviors of HIV positive patients such as medication adherence (Roberts, 2002; Sullivan, Stein, Savetsky, & Samet, 2000) and involvement in health care decision making (Apollo, Golub, Wainberg, & Indyk, 2006; Bakken et al., 2000; Roberts, 2002; Sullivan et al., 2000), minimal research exists on the topic of whether satisfaction with HCPs has an influence on the sexual risk behaviors of HIV positive women. This dissertation explored this association.

Patient/Provider Relationships

Over recent decades, the health care system has experienced a shift from a physician guidance medical model to one that engages the patient in decision-making and self-care (Quill & Brody, 1996). Traditionally, the *standard model* of the patient/provider relationship has involved the provider being viewed as an "expert" by the patient. When acute disease was the primary cause of illness, patients were generally inexperienced and passive recipients of medical care (Holman & Lorig, 2000). Currently, chronic diseases are responsible for the majority of illnesses and are the principal cause of disability and why people seek health care, and consume 70% of healthcare spending (Holman & Lorig, 2000). Now, patients are more active participants in their healthcare resulting in a shift in patient/provider relationships. The standard model of healthcare has proven to be ineffective as chronic health conditions (such as cardiovascular disease, diabetes, and HIV/AIDS) have become the primary causes of illness over acute health conditions (Franks, Clancy, & Nutting, 1992).

Patients with chronic illnesses have to consent and understand behavioral practices to manage their health; thus an effective working relationship between patients and health professionals becomes necessary (Holman & Lorig, 2000). Also, the traditional model places the provider in an authoritative position which creates a significant power differential between the provider and the patient (Apollo et al., 2006). Lastly, the *physician guidance medical model* does not allow for collaboration between patients and providers. The *mutual cooperation model* in which the patient and HCP have approximately equal power, has gained wider acceptance among physicians and patients (Wirtz, Cribb, & Barber, 2006). Collaborative partnerships have resulted in higher satisfaction, better compliance, and greater continuity of care among patients (Wagner, 2000). The shift to the mutual cooperation model has also had positive effects on relationships between HCPs and HIV positive patients (Apollo et al., 2006).

As the HIV/AIDS epidemic has continued, the roles of the HIV positive patient and the HCP have adapted to this model so that both are active participants in the healthcare relationship. The mutual cooperation model recognizes that HIV positive individuals are in control of their HIV treatment and prevention; not their HCPs solely (Indyk & Golub, 2005). Active participation in healthcare also results in increased participation in health promoting behaviors among HIV positive individuals (Gerbert, Brown et al., 1999). As HIV positive patients have become more involved in their healthcare, their satisfaction with healthcare and their HCPs has been shown to influence health behaviors and outcomes such as adherence to medication and enhanced participation in their healthcare.

Patient Satisfaction with Healthcare

As patients have become more engaged in their own healthcare, their satisfaction with healthcare has resulted in improved health outcomes including treatment utilization, continuity of care and clinical outcomes (Hall & Dornan, 1988a; Hudak & Wright, 2000; Kane et al ., 1997; Pascoe, 1983; Sherbourne et al ., 1992; Ware & Davies, 1983). Patient satisfaction, one of the most commonly measured outcomes of patient care (Mahon, 1996), encompasses several dimensions of care including access to care, quality of the provider–patient interpersonal relationships, and affordability of care (Avis, Bond, & Arthur, 2000; Hudak & Wright, 2000; Pascoe, 1983). These dimensions allow patients to form separate opinions of different attributes of their health care experiences including satisfaction with HCPs.

Extensive research has highlighted the association between patient satisfaction with healthcare and health behaviors such as appointment attendance (Pettinati, Monterosso, Lipkin, & Volpicelli, 2003), following medical advice regarding exercise, diet, smoking cessation,(Hauck, Zyzanski, Alemagno, & Medalie, 1990; Uhlmann, Inui, Pecoraro, & Carter, 1988; Zrinyi & Horvath, 2003) and communication with medical staff (Holzemer, 1999; Wilson & Kaplan, 2000). In addition, satisfied patients are more likely to cooperate with their treatments, continue using medical care services, maintain a relationship with a specific provider, participate in their own treatment (Aharony & Strasser, 1993; Carr-Hill, 1992) and cooperate with their health care providers by disclosing important medical information (Aharony & Strasser, 1993). The literature strongly reveals the influences that satisfaction with HCPs can have on various patient health behaviors and outcomes. However, satisfaction with HCPs has seldom been studied in relationship to sexual risk behaviors. Therefore, this study intended to fill

a gap in satisfaction with healthcare literature by exploring satisfaction with HCPs and sexual behaviors of African American HIV positive women.

Patient Satisfaction among People Living with HIV/AIDS

Although research in the area of satisfaction with healthcare among HIV positive patients is relatively new, a number of studies have revealed that satisfaction with HCPs has a positive impact on adherence to antiretroviral medications (ART), (Burke-Miller et al., 2006; Heckman et al., 2004; Roberts, 2002; Schneider et al., 2004; Sullivan et al., 2000) and involvement in health care decision making (Apollo et al., 2006; Bakken et al., 2000). Also, research has identified that specific characteristics are related to HIV positive patients' reported satisfaction with HCPs. Some of these characteristics have included enhanced communication, support, and collaboration (Apollo et al., 2006; Gerbert, Love et al., 1999). For example, higher quality communication between HIV positive patients and HCPs has resulted in longer visit lengths and longer duration of the physician relationship (Marelich & Murphy, 2003; Wilson & Kaplan, 2000), patients being more involved in their own health care and higher levels of patient satisfaction (Cooper-Patrick et al., 1999). These studies provide evidence of significant positive correlations between HIV positive people's satisfaction with HCPs and their health behaviors. These studies also affirm the positive roles that HCPs have on the lives of people living with HIV/AIDS (PLWHA). Almost no studies however exist that examine the impact of satisfaction with HCPs on HIV positive individuals' sexual risk behaviors. My dissertation will make a contribution to the existing research by examining whether satisfaction with HCPs has an influence on the sexual risk behaviors of African American HIV positive women.

Disparities in Health Care

Racism and discrimination have placed substantial burdens on the quality of healthcare that ethnic minority individuals receive. The Institute of Medicine (IOM) report *Unequal Treatment: Confronting Racial and Ethnic Disparities in Healthcare* (2003) illustrated the magnitude of racial and ethnic disparities in healthcare with the conclusion that "racial and ethnic minority patients tend to receive a lower quality of care than non-minorities, even when they have the same types of health insurance" (Medicine, 2003) p. 77). A multitude of factors are responsible for these disparities including access to healthcare (ethnic/minorities have more difficulty getting health care, less options for where they can receive healthcare, and are less likely to have health insurance), cultural and language barriers (many healthcare systems do not have interpreters for non-English speaking patients), biases and prejudicial treatment by HCPs and patients' mistrust of their HCPs. Another alarming concern is that these disparities exist across a wide range of medical conditions including HIV/AIDS and are associated with poorer clinical outcomes and higher mortality among African American patients (Bach, Cramer, Warren, & Begg, 1999; Peterson et al., 1997). For ethnic minority individuals who are HIV positive, these disparities can affect the quality of healthcare they receive and thus influence their satisfaction with HCPs.

Mistrust of Healthcare System

Mistrust of the healthcare system is one of the major factors contributing to healthcare disparities among ethnic/minority individuals. Medical and research abuses stemming from slavery to the Tuskegee Syphilis Experiment form the foundation for much of the historical distrust and suspicion with which African Americans regard the health care system (Byrd & Clayton, 2000; Corbie-Smith, Thomas, & St. George, 2002; Stone, 2004). Due to cumulative discriminatory experiences with health care systems, as well as the larger society, African-American patients may be especially sensitive to interpersonal cues from their providers that convey a message of caring, trustworthiness, and partnership, or not (Gamble, 1993; Krieger & Sidney, 1996; LaVeist, Nickerson, & Bowie, 2000; van Ryn & Burke, 2000). These mistrust issues have also influenced the relationships between minority patients and their HCPs. For example, minority patients have reported being more likely to have adverse communication experiences with their HCPs such as having physicians not listen to them or ask appropriate questions (Collins, Hughes, & Doty, 2002; Cooper-Patrick et al., 1999). They have also reported feeling less involved in decisions regarding their health care than do White patients (Collins et al., 2002; Cooper-Patrick et al., 1999). As HIV/AIDS infection has progressed to a major health disparity among African Americans, their mistrust of the healthcare system has intensified (Gant, Green, Stewart, Wheeler, & Wright, 1998; Thomas & Quinn, 1991).

Discrimination and Stigmatization of People Living with HIV/AIDS

There are vast differences between HIV/AIDS and other chronic health diseases that can affect the attitudes of PLWHA towards their HCPs and the healthcare system. First, HIV/AIDS is one of the most stigmatizing diseases in U.S. history (Gilbert, 2003). The modes of HIV transmission, particularly sexual intercourse of men who have sex with men (MSM) and injection drug use, are highly stigmatized behaviors that put HIV positive individuals under constant scrutiny. Although public health efforts have focused on destigmatization through education, the strong association between sexuality and morality in American society still exists (Flynn, McKeever, Spada, & Gordon-Garofalo, 2000). As a result, people living with HIV have faced homophobia, sexism, and denial of treatment in various settings including medical settings (Lloyd & Kuszelewicz, 1995) and continue to experience discrimination with 26% of HIV positive patients reporting perceived discrimination in the health care setting (Schuster et al., 2005). HIV/AIDS discrimination in medical settings has affected both patients and HCPs. Despite their medical training and expertise, HCPs have difficulty discussing sexual behaviors, substance abuse, and other stigmatized behaviors, and experience more discomfort discussing stigmatized behaviors than patients (Epstein et al., 1998; Makadon & Silin, 1995). Despite recommendations by the CDC (2003) and the IOM (2003) that HCPs provide prevention counseling for HIV positive patients, both newly diagnosed and established HIV-positive patients report low rates of transmission prevention counseling by HCPs (Metsch et al., 2004). In two different studies of HIV positive individuals, approximately 25% and 29% of participants reported that a provider had not talked with them about safe sex (Margolis, Wolitski, Parsons, & Gomez , 2001; Marks, Richardson, & Crepaz, 2003).

PLWHA also have difficulty discussing stigmatized behaviors with HCPs (Curtis & Patrick, 1997). According to Bova (2000), many HIV-infected women avoid talking about sexual activity with HCPs if they have engaged in unsafe sexual practices because they fear criticism from their HCPs. Judgmental providers can possibly re-stigmatize HCP positive patients during their interactions (Kalichman, 1995; McRae, 1991). The fear of being exposed to additional stigma may prevent HIV positive women from discussing very personal issues with their HCPs.

Discrimination may be a factor that influences satisfaction with HCPs among African American women living with HIV/AIDS. Multiple research studies have shown that minority patients are less satisfied with their HIV/AIDS care than White patients (Stone, Weissman, & Cleary, 1995) resulting in negative health outcomes such as treatment underutilization and discontinuity of care (Abel & Painter, 2003; Taylor & Madrigal, 1998). African American women who are HIV positive are vulnerable to additional discrimination by their HCP based on race, gender, and their HIV status. Further, discriminatory practices have been linked to discontinuity of care among HIV positive individuals (Sohler, Li, & Cunningham, 2007).

Patient Characteristics and Satisfaction with Health Care

A number of research studies have established that patient socio-demographic and psychosocial characteristics such as age, ethnicity/race, education level, sex, marital status, health insurance type, and drug use (Hall & Dornan, 1990; Stein, Fleishman, Mor, & Dresser, 1993; Stone et al., 1995; Sullivan et al., 2000) predict differences in satisfaction with healthcare (Burke-Miller et al., 2006). Hall and Dorman (1990) found that older age, low education levels, being married, and higher social status predicted satisfaction with healthcare, although the relationships varied across racial/ethnic and gender categories. Characteristics that predict

satisfaction with healthcare among HIV positive patients have been studied as well. Characteristics associated with less satisfaction in healthcare have included being African American, having public or no health insurance, intravenous drug use (IDU), reported lower health status, and more intense HIV related symptoms (Stein et al., 1993; Stone et al., 1995). In a recent study of HIV positive patients, higher levels of satisfaction with physicians were reported among non African American women, patients with lower income, those classified as at heterosexual risk, those with low drug scores, and better health status (Sullivan et al., 2000). Although the healthcare satisfaction literature provides a definite foundation for analysis of satisfaction with HCPs among African American, HIV positive women, the majority of literature in this area focuses on general satisfaction with health care. There has been minimal exploration of satisfaction with HCPs, which is a specific component of healthcare. There has also been limited research on associations between satisfaction with HCPs and risk taking behaviors. This dissertation contributed to this gap by exploring patient characteristics that influence satisfaction with HCPs among African American women living with HIV/AIDS and in turn, how satisfaction with HCPs influences their sexual risk behaviors.

Healthcare Provider Characteristics

As demonstrated by recent research, HCP characteristics such as communication style, gender, ethnicity/race, and provider type influence patient satisfaction (Cooper et al., 2003; Wilson & Kaplan, 2000). Because satisfaction with healthcare can influence the quality of care received, health outcomes, and behaviors (Hudak & Wright, 2000), this study can provide new insight to HCPs of possible barriers and solutions to enhancing the satisfaction of their HIV positive patients during clinical visits. I review below some of the HCP characteristics that are most relevant to this study.

Race Concordance

African Americans and other ethnic minority patients in race-discordant relationships with their physicians report less involvement in medical decisions, less partnership with physicians, and less satisfaction with healthcare (Cooper-Patrick et al., 1999; Doescher, Saver, Franks, & Fiscella, 2000; Kaplan, Gandek , Greenfield, Rogers, & Ware, 1995; Saha, Komaromy, Koepsell, & Bindman, 1999). Further, race-concordant visits have been found to be more satisfying, more participatory, include more positive patient affect, and to be longer (Cooper et al., 2003). With regards to HIV positive patients, King et al. (2004) found that African-Americans with White providers received protease inhibitors significantly later than African-American patients with African-American providers. These studies clearly exhibit the impact that racial concordance can have on African American HIV positive patients' satisfaction with HCPs.

Gender Concordance

Research has shown that female physicians in comparison to male physicians are more likely to have patients that are satisfied with healthcare (Bertakis, Franks, & Azari, 2003; Derose, Hays, McCaffrey, & Baker, 2001). This occurrence has also been found among HIV positive patients, with research indicating that female physicians have a more effective communication style for discussing topics such as sexual conduct and substance abuse, that HIV positive patients feel more respected by female physicians during clinic visits, and that respect by physicians can enhance engagement in healthcare (Beran, Cunningham, Landon, Wilson, & Wong, 2007; Wilson & Kaplan, 2000).

Provider Relationships with HIV Positive Women

A limited number of studies have explored associations between satisfaction with healthcare and health outcomes among HIV positive women. In a national cohort of HIV positive women, women who reported poor health, who reported depressive symptoms, who were not receiving antiretroviral therapy (ART), who had no consistent HCPs, or who self identified as Hispanic/Latina reported the highest levels of dissatisfaction with healthcare and were most dissatisfied specifically with access to care, the quality of care, financial aspects of care, and their HCP's interpersonal manner (Burke, 2003). Research on satisfaction and health outcomes has also shown that communication with HCPs is an influential factor for HIV positive women's adherence to ART (Abel & Painter, 2003) and increased involvement in healthcare decision making (Marelich & Murphy, 2003). All of the studies mentioned suggest definite relationships between satisfaction with healthcare and positive health outcomes for HIV positive women. Nonetheless, there is a paucity of literature examining satisfaction with HCPs among African American HIV positive women. Further, there are few studies that have explored sexual risk behaviors as a health outcome. Therefore, this dissertation intended to fill this gap in the literature by exploring associations between satisfaction with HCPs and the sexual risk behaviors of African American women living with HIV/AIDS.

Satisfaction with Healthcare Providers and Sexual Behavior

There is a dearth of research on the association between satisfaction with HCPs and sexual behaviors of patients. A qualitative study examining how HIV positive patients' attitudes towards healthcare providers related to the patients' sexual risk behaviors found that patients reported that they were more involved when their physicians used a relationship-centered

approach to healthcare (Gerbert, Love, Caspers, Linkins, & Burack, 1999). A relationship-centered approach includes qualities such as interpersonal competence, trust, affect, and communication. Participants reported that being more involved in their healthcare led to improved health outcomes including reduced unsafe sexual behaviors. Although this study suggested potential associations between patients' attitudes toward providers and sexual risk behaviors, the study design did not allow for the statistical testing of variables, and did not specify which sexual risk behaviors were reduced. To fill this gap in the literature, my dissertation explored relationships between satisfaction with HCPs and sexual risk behaviors including unprotected anal and vaginal sexual intercourse and the frequency of condom use. Moreover, the study's quantitative design allowed me to test the relationship between the aforementioned variables.

Limits of existing literature

Through this review of the literature on patient satisfaction, I have presented research that supports the significant role that satisfaction with healthcare has on the health outcomes of patients particularly as many health problems have changed from acute conditions to chronic conditions. Health outcomes of HIV positive patients are also influenced by their satisfaction with healthcare. However, most of the studies of healthcare satisfaction among HIV positive patients have: (1) involved primarily male participants (Ho, Thiel, Rubin, & Singer, 2000; Katz et al., 1997; Stein et al., 1993; Stone et al., 1995; Sullivan et al., 2000; Tsasis, Tsoukas, & Deutsch, 2000), (2) focused on medication adherence as an outcome of patient satisfaction (Abel & Painter, 2003; Burke-Miller et al., 2006; Heckman et al., 2004; Roberts, 2002), and (3) have been qualitative in design, limiting the testing of relationships between variables (Abel & Painter, 2003; Apollo et al., 2006; Marelich & Murphy, 2003; Sowell et al., 1996).

There is a scarcity of research exploring associations between patient satisfaction and sexual risk behaviors among HIV positive patients. Further, I am aware of no studies that have focused specifically on patient satisfaction among African American women, who are disproportionately impacted by HIV. Thus, my dissertation intends to fill this gap in the literature by examining the effects of African American HIV positive women's satisfaction with HCPs on their sexual risk behaviors.

Theoretical Framework: Attitudes and Satisfaction

This dissertation is informed by the theoretical concept of "attitudes" (Azjen & Fishbein, 1975) and the theoretical concept of "patient satisfaction" (Linder-Pelz, 1982). The social psychological concepts of attitudes and patient satisfaction provide the conceptual framework for my dissertation's investigation of African American HIV positive women's satisfaction with their HCPs. Attitudes are comprised of three determinants: beliefs, attributes, and belief strength. *Beliefs* represent the information an individual has about an object and that object is then linked to certain *attributes* (Ajzen & Fishbein, 1975). People however differ in their *belief strength,* that is, in the perceived likelihood that the attribute is associated with the object (Ajzen & Fishbein, 1975). Thus, attitudes are a measurement of one's beliefs and evaluations towards an object. Following this logic, I operationalize patient satisfaction as a dimension of attitudes.

According to Linder-Pelz (1982), satisfaction or dissatisfaction can be considered expressions of an *attitude* and treated theoretically and methodologically as such. For the purposes of this study, I utilize the definition of patient satisfaction as positive attitudes towards distinct dimensions of healthcare (i.e., a single clinic visit, treatment throughout an illness episode, a particular health care setting or plan, or the health care system in general) based on belief strength and attitude evaluations (Linder-Pelz, 1982).

Researchers have used this framework in various studies to measure patient satisfaction with healthcare. For example, Ware, Davies-Avery, and Stewart (1978) noted that patient satisfaction with healthcare has been measured even in studies that have instead explored patients' attitudes, evaluations, or affective responses to healthcare. As patient satisfaction research has evolved, the measurement of satisfaction with healthcare has expanded to include

multidimensional elements such as access to care, health plans, hospitals, physicians, quality of the provider–patient interpersonal relationships, and affordability of care (Avis et al., 2000; Di Palo, 1997; Hudak & Wright, 2000; Pascoe, 1983). By utilizing the concept of *patient satisfaction*, satisfaction with HCPs can be viewed as a measurement of patients' beliefs and evaluations of their HCPs. Therefore, satisfaction with HCPs was measured by examining the beliefs and evaluations of the HCPs of the participants in the study.

CHAPTER 3: METHODS

This dissertation was a secondary analysis of data collected during the *Protect & Respect Program*, a randomized controlled intervention study for HIV positive women with HIV/AIDS. This dissertation also investigated relationships among the sociodemographic and psychosocial characteristics, satisfaction with HCPs and condom use among a cohort of African American HIV positive women who participated in *Protect and Respect* ($N = 157$). The analysis tested the following hypotheses:

Hypothesis#1: Participants who reported more communication with their HCP, more positive evaluations of their health, current use of HIV drug therapy, an undetectable viral load, higher CD4 counts, and non-use of illegal drugs would report higher levels of satisfaction with their HCPs than participants who rated their health more negatively, were not currently taking HIV drug therapy, had a detectable viral load, had lower CD4 counts, used illegal drugs and reported less communication with their HCP.

Hypothesis 2: Participants who reported higher levels of satisfaction with their HCP would report higher levels of condom use in comparison to women who reported lower levels of satisfaction.

Hypothesis#3: Satisfaction with HCP would mediate the relationship between participant characteristics and condom use.

Hypothesis#4: Satisfaction with HCP would mediate the relationship between communication with HCP and condom use.

Conceptual Models

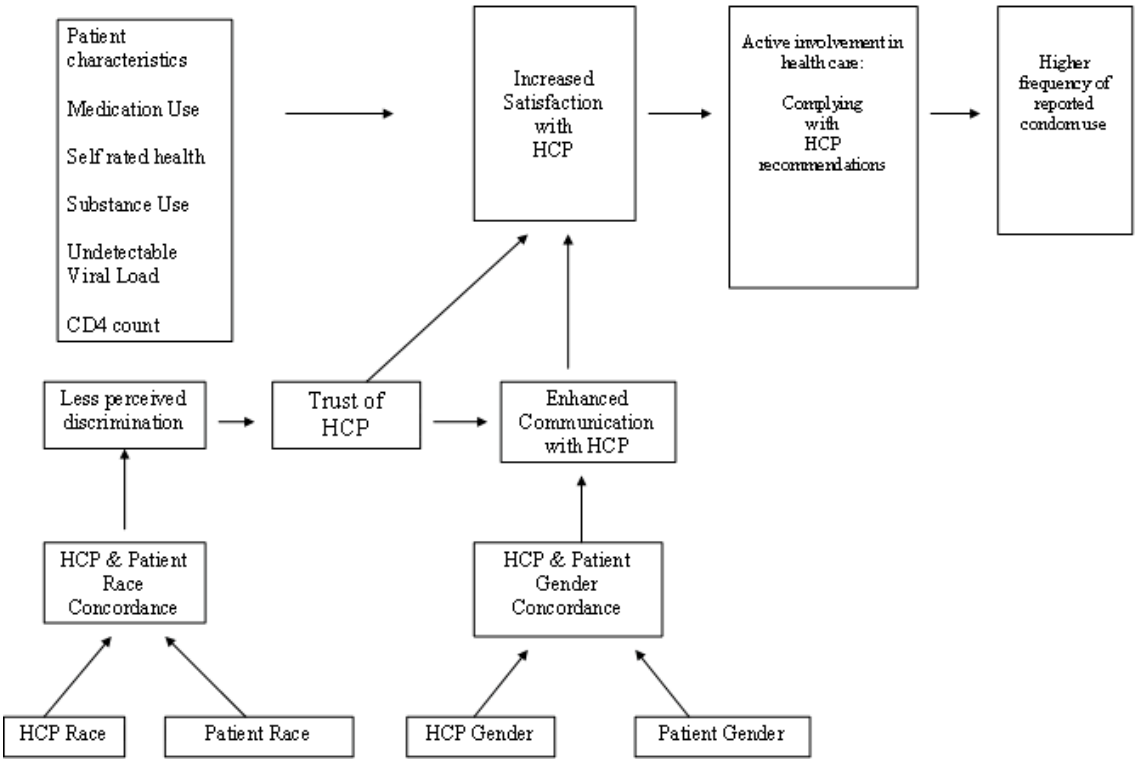
Drawing on theoretical and empirical relationships that I have highlighted in the literature review, I developed two conceptual models: a theoretical model and a testable model. When I use the term *theoretical model*, I am referring to a model that I developed based on findings from the theoretical literature. The theoretical model highlights the concepts and questions from the literature that include the study's main variables (i.e., participant characteristics, satisfaction with HCP, and condom use). All of the questions that I would need to test the theoretical model were not included in the original study, however; a limitation of the data. Therefore, I developed a testable model. When I use the term *testable model*, I am referring to the model that includes the questions and concepts that are available for statistical analyses from the baseline data. This model was tested in the final analysis.

Theoretical model

The theoretical model (see Figure 1 below) encompasses the findings of my above literature review that demonstrated the relationships between participants' characteristics, HCP characteristics, satisfaction with HCPs, and condom use. It is also an expansion of Gerbert and colleagues' (1999) theoretical model of the relationship between the characteristics of HIV positive patients, the characteristics of physicians, patient involvement in healthcare and improved health outcomes. Recent literature revealed that satisfaction with HCPs has had a significant impact on patients' involvement in their health care (Apollo et al., 2006; Bakken et al., 2000; Roberts, 2002; Sullivan et al., 2000). HIV positive patients' active participation in their health care in turn results in increased participation in health promoting behaviors (Gerbert, Brown et al., 1999). Since satisfaction has been shown to be significantly associated with

involvement in healthcare among HIV positive patients satisfaction with HCPs, it preceded involvement in health care in my adaptation of Gerbert et. al's model (1999). This model would have allowed me to examine whether participant and HCP characteristics influenced satisfaction and whether higher levels of satisfaction lead to enhanced patient involvement in healthcare, and in turn, increased frequency of condom use. Below is the theoretical model:

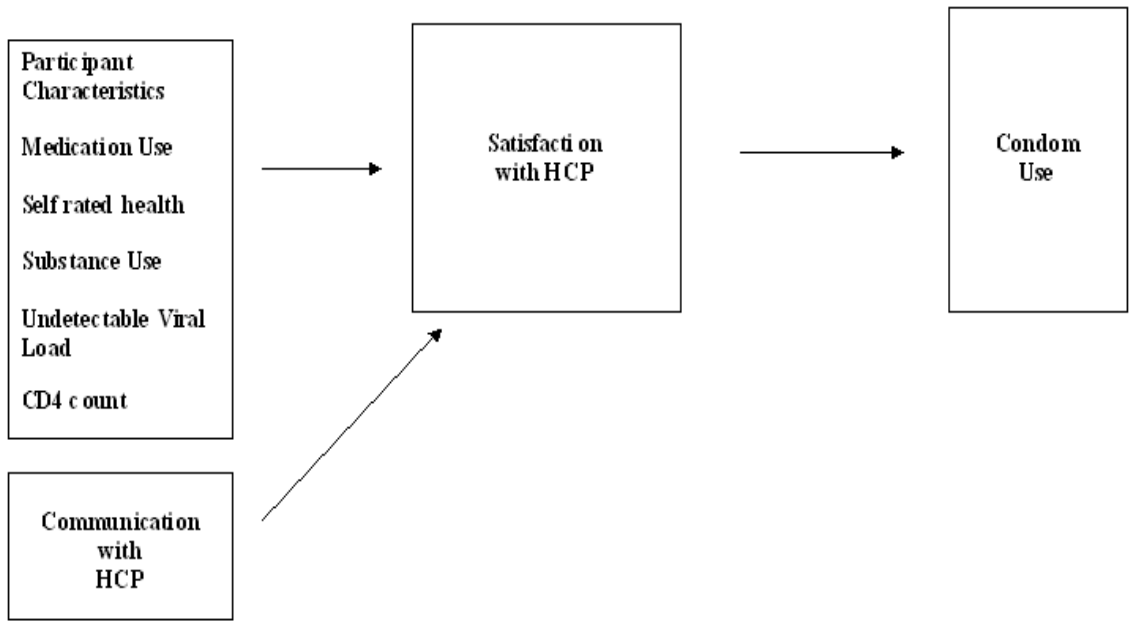
Figure 1: Theoretical Model



Testable Model

The testable model (see Figure 2 below) includes the questions that were available for statistical analysis from the original study's questionnaire. Due to the small number of healthcare providers in the original study (N =10), there was not enough variability in the available sample for a meaningful analysis of the effects of HCP gender and race/ethnicity on satisfaction levels. Thus, HCP characteristics were not tested in the analysis. Further, there were no questions in the available data that encompassed "patient involvement in healthcare" thereby limiting my ability to test whether enhanced involvement in healthcare was associated with a higher frequency of condom use. Thus, the following model was tested to explore the relationships between patients' characteristics, satisfaction with HCPs, and condom use. Below is the testable model:

Figure 2: Testable Model



Research Context

Protect and Respect, a sexual risk reduction intervention study, was developed to address the barriers that prevent HIV positive women from engaging in safer sex practices (Teti et al., 2007). The program was designed to increase HIV/AIDS knowledge, protective attitudes, and risk-reduction self-efficacy (Teti et al., 2007). The ultimate goal was for participants in the intervention to decrease two risky sexual behaviors: (1) non- disclosure of their HIV status to sexual partners and (2) sexual intercourse without the use of condoms.

Recruitment strategies

Study participants were recruited from the Partnership Comprehensive Care Practice (PCCP), the largest HIV primary care practice in Philadelphia, PA. PCCP patients were recruited by research assistants and peer educators in the clinic waiting room. Women who were at least 18 years old, English speaking, and HIV positive for at least six months were eligible for the study.

Participants were randomly assigned to one of two groups. One group received *only* the provider intervention in which they received sexual risk reduction messages from physicians and nurse practitioners who provided primary care to HIV positive women. Clinical HIV primary care providers were trained to deliver science-driven messages that addressed risky sexual behaviors. HCPs delivered the provider intervention during routine medical visits with their patients. The other group received the enhanced intervention which included: the provider intervention, participation in the group led intervention, and participation in the peer led support group. The original study sample included 185 women and 12 HCPs. Since only baseline data

are used in the analyses reported herein, the assigned groups were combined for the purposes of the dissertation.

Protection of Human Subjects

Eligible participants were informed of the purpose of the study, benefits and risks to their voluntary participation and that the refusal of participation would not jeopardize their health care at the clinic. Drexel University's Internal Review Board reviewed and approved the study prior to data collection or contact with participants.

Methods

Sample Selection

African American women with HIV/AIDS, the focus of this dissertation, accounted for 85% of the *Protect and Respect* participants. My dissertation encompassed only the African American subsample only (n = 157). The mean age of the participants was 39.85 years old (SD = 8.72). The mean year of HIV diagnosis for this sample was 1996 (SD = 5.08). With regards to education, approximately 44.6% of the sample did not graduate from high school, 33.8% had a high school diploma or GED, 15.3% had some college, 3.2 % had a college degree, and 1.3% had some graduate school training. With regards to income, approximately 73% of the sample reported an annual income of less than $10,000. As for relationship status, approximately 55.4% of the sample was single, 19.7% was in a relationship, 7% was married, 10.8% was separated or divorced, 5.7% was widowed; 1.3% reported their relationship status as "other."

Power Analysis

Preliminary power analyses were conducted to verify whether the sample size (N=157) was sufficiently large to detect the likelihood of finding a particular effect size (Cohen, 1992). Based on power analysis calculations with the GPower software (Faul, Erdfelder, Lang, & Buchner, 2007) to yield a statistical power of 0.80 (as typically utilized in public health research) (Brown et al., 2005) with a correlation test, a two-tailed alpha of 0.05, and a small effect size (d =. 25), it was estimated that a total minimum sample of 120 participants would be needed. The effect size is intended to represent the effect after adjusting for confounders. Therefore, 157 participants should provide sufficient power to test all of the study's hypotheses. The analysis plan called for a series of regression models. The power analysis identified a sample size that would provide sufficient power for the primary analyses that involved predicting satisfaction and condom use. The intent of the mediation hypotheses was to examine whether participant characteristics and communication would be significantly reduced in their association to condom use once satisfaction was controlled. Showing a reduction in an effect is more difficult than showing the effect itself, therefore it is likely that power would be adequate only if the mediation pattern represented a relatively large magnitude of effect.

Survey Instrument and Administration

All women enrolled in the program completed confidential questionnaires over four time periods: at baseline, 6 months, 12 months, and 18 months. To reduce the possibility of intervention effects confounding the results, only baseline data were utilized. Participants' demographic characteristics, health status, and sexual behavior data were collected using Audio Computer-Assisted Self-Interviewing (ACASI) procedures. ACASI is a computer driven

technology that administers questionnaires in an audio format and records respondents' answers directly onto a computer. The questionnaires were administered to the participants at the study site. ACASI has been shown to increase the accuracy of self-reported data about risky sexual behaviors (Turner, et.al, 1998). Self-reports however may potentially affect internal validity, thus several steps were taken to increase the validity of self-reports. To reduce the likelihood that participants would minimize or exaggerate reports of experiences, the importance of responding honestly was emphasized. Participants were also assured that their responses would be kept confidential. The intervention specialist collected the original questionnaire data between March 2004 and March 2006. I was not involved in any of the study's data collection procedures.

Variables

Several variables were used in this secondary analysis including demographics, psychosocial characteristics, sexual behaviors, and questions related to satisfaction with HCPs. To reduce the possibility of intervention effects confounding the results, only baseline data were utilized.

Participant Characteristics

Participant characteristics were the first factor examined. I utilized information provided by the African American participants at baseline to assess their associations to satisfaction with HCPs and condom use. The selected items were related to HIV health status and illegal drug use (see Appendix A). The following characteristics were assessed to examine their associations to satisfaction and condom use.

HIV health status

In the original study, participants were asked a number of HIV health status questions including their current CD4 count, viral load, self-rated health, and whether they were using HIV drug therapy (see Appendix A). Examples of the items include "What was the count of your most recent CD4 T-cell?" and "Was the result of your most recent viral load test detectable? (response = yes/no)." With regards to the reliability and validity of self reported CD4 count, Kalichman and colleagues (2000) found significant correlations between health status markers provided by participants and those abstracted from medical records for CD4 cell counts (Pearson $r(135)=0.82$, $p < 0.01$, Spearman $rho=0.89$) and of viral load (Pearson $r(97)=0.73$, $p < 0.01$, Spearman $rho=0.74$, $p < 0.01$). The greatest validity occurred for recall of undetectable viral load (Kappa coefficient = 0.72). Thus, pursuant to Kalichman et al. (2000), I presumed that the self reported CD4 count and undetectable viral load items from the study questionnaire are reliable and valid and utilized them in the analysis.

Illegal Drug Use

Participants completed questions about their drug use (IDU) in the past 30 days. The item that was included in the analysis was the following: "In the last 30 days, have you injected any drugs? (response = yes/no). With regards to the reliability and validity of self reported IDU measures, Johnson and colleagues (2000) examined the reliability and validity of self-reported IDU among a sample of 259 drug users not in treatment. Self report of injection behavior in the last 30 days was relatively reliable (Pearson $r (127= 0.88)$. Validity of self-reported drug use was determined by comparing responses to questions about drug use in the last 48 hours to urinalysis results. Total agreement between self-report and urinalysis results was over 84% with

comparable kappa coefficients for cocaine (Kappa coefficient =0.671) and opiates (Kappa coefficient =0.577). Thus, pursuant to Johnson et al. (2000), I presumed that the self reported injection drug use items from the study questionnaire were reliable and valid and utilized them in the analysis.

Communication with Healthcare Providers

Participants were asked questions about communication with their HCP including whether they had discussed sex, condom use, and transmission of HIV with the HCP. The items included in the analyses were: (1) "I do not discuss sex with my primary healthcare provider because it is a private matter," (2) "During my office visits, my primary healthcare provider and I usually talk about the risk of my transmitting HIV to others," and (3) "The subject of using condoms never comes up during my regular HIV care visits." All of the response choices utilized a Likert scale of 1 (strongly disagree) to 7 (strongly agree). I tested the reliability of the communication scale using Cronbach's coefficient alpha (Cronbach, 1951). The communication items had very low reliability (Cronbach's alpha = .44) and thus the communication items were treated as separate items and not as a scale.

Satisfaction with Healthcare Providers

Three items posed to the participants about their experiences with their HCPs (see Appendix A) were utilized to assess satisfaction with HCPs. The items included the following: (1) "I am satisfied with the HIV prevention services that I receive from the staff at this clinic"; (2) "I am satisfied with the social support services I receive at this clinic"; and (3) "I am satisfied with the HIV prevention services that I receive from the staff at this clinic." All of the response choices utilized a Likert scale of 1 (strongly disagree) to 7 (strongly agree). I tested the reliability

of the scale using Cronbach's coefficient alpha. The satisfaction items had very low reliability (Cronbach's alpha = .33) and thus the satisfaction items were treated as separate items and not as a scale.

Outcome Variable: Condom Use

The outcome variable of interest for this dissertation was reported condom use. To measure condom use, I utilized survey questions posed to the participants about the frequency of anal and vaginal intercourse in the past six months with HIV positive partners, HIV negative partners and unknown status partners and the number of times that a condom was used with these partners in a 6-month period (See Appendix A). In the analysis, all partners were treated equally regardless of HIV status. Examples of the items included: (1) "In the last six months, how many times did you have vaginal sex with your HIV positive partners?" and (2) "In the last six months how many times did you use a condom with these partners?"

According to Jaccard et al., (2002) the total number of acts of intercourse and the total number of protected acts information can be converted into a condom use percentage. A major advantage of this method is that it allows the researcher to infer the number of unprotected sex acts (Jaccard et al., 2002) and obtain a more accurate assessment of the STD/HIV risk level of participants. It was originally proposed to utilize a condom use percentage score based on the number of instances of unprotected anal and vaginal intercourse and the number of times a condom was reportedly used by the participants. However, there wa sa limited range of overall sexual behavior (number of instances of vaginal intercourse and number of times of condom use) reported by the participants As a result, the condom use variables was dichomitized into a binary variable.

Data Analysis

Descriptive statistics and frequency counts were used to characterize the study sample, and hypotheses were tested using multivariate methods appropriate to the level of the variables. Bivariate comparisons used Chi-square tests to compare proportions and t-tests (or Mann-Whitney U-test) were used to compare means. Pearson's (or Spearman's depending on the data distribution) correlations were used to determine the relationship between the study variables. Corresponding univariate analyses used regression with each variable (e.g. drug use, communication, satisfaction) representing a single concept in the testable model. The hypotheses were examined as follows:

Hypothesis #1

My first analysis tested Hypothesis #1 (participants who report more communication with their HCP, more positive evaluations of their health, current use of HIV drug therapy, an undetectable viral load, higher CD4 counts, and non-use of illegal drugs will report higher levels of satisfaction with their HCPs than participants who rate their health more negatively, are not currently taking HIV drug therapy, have a detectable viral load, have lower CD4 counts, use illegal drugs, and report less communication with their HCP). In this analysis, satisfaction with HCP was the dependent variable, being predicted from participant characteristics. Bivariate relationships between the independent variables (participant characteristics) and the dependent variable (satisfaction with HCP score) were assessed using t-tests (or Mann-Whitney U-tests depending on the distribution of the independent variables) for categorical variables (e.g. viral load and current drug therapy use) correlation analysis for continuous variables (e.g., CD4 count).

Following these bivariate comparisons, regression models (Berry & Feldman, 1985) were constructed using participant characteristics as the predictor variables and satisfaction with HCP as the outcome variable.. Linear regression was used to determine the relationship between the participant characteristics (e.g., viral load, drug therapy use, illegal drug use) and the satisfaction with HCPs variables.

Hypothesis #2

My second analysis tested Hypothesis #2 (participants who report higher levels of satisfaction with their HCP will report higher levels of condom use in comparison to women who report lower levels of satisfaction*).* In this analysis, satisfaction with HCPs was the independent variable and condom use was the dependent variable. I began the analysis by examining bivariate relationships between the satisfaction with HCPs score and the condom use score using correlation analysis. Logistic regression procedures were utilized to determine the relationship between the satisfaction with HCPs (IV) and condom use (DV).

Hypothesis #3

My third analysis tested Hypothesis #3 (satisfaction with HCP mediates the relationship between participant characteristics and condom use). I utilized Baron and Kenny's (1986) mediation model to assess whether satisfaction with HCPs mediated the relationship between participant characteristics and condom use. The presence of mediation was assessed by running three regression models: (1) satisfaction with HCPs as the dependent variable (DV) with participant characteristics as the independent variable (IV); (2) condom use as the DV with participant characteristics as the IV; and 3) condom use as the DV with satisfaction with HCPs and participant characteristics as the IVs. Pursuant to the Baron and Kenny model of mediation,

mediation would be present if participant characteristics were significant in model 1 and model 2, and satisfaction with HCPs was significant in model 3 whereas participant characteristics have either become entirely non-significant or significantly reduced in their association with condom use. If the association between participant characteristics and condom use was significantly reduced when satisfaction was controlled, this would demonstrate that condom use was mediated by satisfaction with HCPs.

Hypothesis #4

My last analysis tested Hypothesis #4 (satisfaction with HCP mediates the relationship between communication and condom use). The presence of mediation was assessed by running three regression models: 1) satisfaction with HCPs as the DV with communication as the IV; 2) condom use as the DV with communication as the IV; and 3) condom use as the DV with satisfaction with HCPs and communication as the IVs. Pursuant to the Baron and Kenny model of mediation, mediation would be present if communication was significant in model 1 and model 2, and satisfaction with HCPs was significant in model 3 whereas communication either becomes entirely non-significant or was significantly reduced in its association with condom use.

Limitations

Baron and Kenny's mediation model (1986) has been critiqued for a number of reasons including: (a) the assumption that the mediator directly influences the outcome (Baron & Kenny, 1986); (b) its ambiguity in differences between moderators and mediators (Kramer, Wilson, Fairburn, & Agras, 2002); (c) the necessity of large paths between variables so that mediation can be detected (Kramer, Stice, Kazdin, Offord, & Kupfer, 2001); (d) effects are likely to be biased if the mediator is measured with poor reliability and few measures have perfect reliability

(Hoyle & Kenny, 1998); and (e) its reliance on significance to detect mediation (Kramer et al., 2001). Although there are a number of approaches to testing for mediation effects, many of the weaknesses of the Baron and Kenny model have been highlighted and noted for randomized controlled trials and intervention studies neither of which are relevant to this dissertation's data. Notwithstanding, I opted to use the Baron and Kenny (1986) approach for this dissertation due to issues concerning: (1) the small sample size of the study ($N = 157$); and (2) a possible smaller size upon exploration of missing data.

It is recognized that some researchers use structural equation analysis or other path modeling to identify complex indirect relationships between variables. Keeping the aforementioned issues in mind, more sophisticated techniques may prove to be difficult for quantifying the relationships of interest (participant health characteristics, satisfaction with HCPs, and condom use behaviors). With the aforementioned weaknesses, Baron and Kenny's mediation approach has still been utilized by a number of current research studies in top peer reviewed journals (Barsevick, Dudley, & Beck, 2006; Mensinger, Lynch, Tenhave, & McKay, 2007; O'Leary, Jemmott, & Jemmott, 2008; Sanderson & Jemmott, 2006; Vogt, Hall, Hankins, & Marteau, 2009; Wingood et al., 2006).

CHAPTER 4: RESULTS

This chapter describes the analysis variables and presents the results from hypothesis testing. All statistical analyses were conducted using SPSS statistical software version 16. An alpha level of 0.05 was used in all analyses.

Sample Description

Table 1 provides an overview of the demographic characteristics of the participants. The sample included 157 African American women who participated in the "Protect Respect" program. The mean age of the participants was 39.85 years old (*SD* = 8.72). Approximately half of the sample reported being single. The sample was mostly low income with 73% of participants reporting annual incomes of less than $10,000; 78% were unemployed. In terms of education, about 35% of the sample reported a high school diploma and18% reported having a post secondary education. The majority of participants (83%) identified as heterosexual and 82% reported that they were infected with HIV from heterosexual intercourse.

Table 1 *Summary of Participant Demographic Variables (N = 157)*

Variable	N	Percent	*M*(SD)
Age			39.85(8.72)
Level of Education			
Did not graduate from HS	70	44.6	
HS Graduate/GED	53	33.8	
Some college/AA degree	24	15.3	
College Graduate (BA/BS)	5	3.2	
Some graduate school	2	1.3	
Employed	33	21.2	
Yes	123	78.3	
No			
Sexual Identification			
Heterosexual	130	82.8	
Gay/Homosexual	9	5.7	
Bisexual	13	8.3	
Other	2	1.3	
Not Sure	2	1.3	
Relationship Status			
Single/Never Married	87	55.4	
Committed Relationship	20	12.7	
Domestic Partnership	10	7.0	
Married	11	7.0	
Separated	6	3.8	
Divorced	11	7.0	
Widowed	9	5.7	
Other	3	1.3	
Annual Personal Income			
$10,000 or less	115	73.2	
$10,001 to $20,000	22	14.0	
$20,001 to $40,000	13	8.3	
$40,001 to $60,000	4	2.5	
$60,001 to $80,000	2	1.3	
Over $80,000	1	1.6	
Mode of HIV Transmission			
Sex with HIV positive man	129	82.2	
Sex with HIV positive woman	2	1.3	
Sharing needles	23	14.6	
Needle Stick	3	1.9	

Description of Study Variables

Description of Participant Health Characteristics

Several psychosocial and health variables were considered potential predictors of satisfaction with HCPs and condom use. These variables include participant self-reported health status, CD4 count, viral load, illegal drug use, and medication therapy use. Descriptive statistics for these variables are reported in Table 2.

As shown in Table 2, illegal drug use among the sample was relatively low, with only 26% reporting drug use in the past 30 days. With regards to HIV health status, 65% of participants reported having a detectable viral load. The mean CD4 count was 459.36 (SD = 332.629). Considering that a CD count of less than 200 signifies an AIDS diagnosis (Wu et al., 2000), the mean CD4 count of the participants is good. Lastly, almost half of the participants (49%) reported current medication therapy use at baseline.

Table 2
Summary of Baseline Means of Participant Characteristics (N=157)

Variable	N(%)	Mean	SD	Median	Minimum	Maximum
Viral Load Detectable – yes	82 (65.1)					
Most recent CD4 count		459.36	332.63	400.0	0	2,000
Current Medication – yes	77 (63.1)					
Illegal Drug Use in past 30 days – yes	38 (25.9)					
Self reported health status		3.12	1.14	3.0	1	5

Description of Communication with HCPs

In order to obtain a common metric of the associations between the three communication items, correlation analyses were conducted. Findings revealed that communication about sex and risk of HIV transmission were significantly correlated to communication about condom use (Table 3).To determine if using the communication items had adequate reliability or precision in measuring a single underlying dimension of communication with HCPs, Cronbach's alpha was computed. Scales are considered reliable if they have reliability scores of .70 or above (Devellis, 2003). The communication items had very low reliability (Cronbach's alpha = .44). As a result, the three communication items were treated as distinct variables for purpose of analysis as there were no other items from the survey that measured communication with HCPs. Although multiple item scales that measure one dimension (e.g., communication with HCPs) improve the reliability or precision over single item measures, in the absence of multiple item measures single item measures provide useful information (Young, Fogg, Scheftner, Fawcett, & Akiksal, 1996).

Overall, participants reported some degree of communication with their HCPs based on the three communication variables (Table 4). Regarding communication about sex, 63% (n = 96) of the sample reported discussing sex with their HCP. Approximately 63% (n = 95) of the sample discussed condom use with their HCP during their clinic visits. Finally, a majority of the sample (66%, n = 101) reported agreement with the statement that they had communicated with their HCP about transmitting HIV to others.

Table 3
Correlations between mean scores of communication variables (N=157)

Variables	1	2	3
1 Communication about Sex	--	--	--
2 Communication about HIV transmission	.06	--	--
3 Communication about Condom Use	.32***	.24***	--

***Correlation significant at $p<.01$ (two-tailed)
**Correlation significant at $p<.05$ (two-tailed)
*Correlation significant at $p<.100$ (two-tailed)

Table 4
Summary of Reported Communication with HCPs (N =157)

Variable	N	%
Do not communicate about sex		
Strongly Disagree	48	31.37
Disagree	42	27.45
Somewhat Disagree	6	3.92
Neither agree nor disagree	15	9.80
Somewhat agree	9	5.88
Agree	16	10.46
Strongly Agree	17	11.1
Communicate about HIV/AIDS Transmission		
	36	23.38
Strongly Agree	37	24.03
Agree	28	18.18
Somewhat agree	17	11.04
Neither agree nor disagree	3	1.95
Somewhat disagree	16	10.39
Disagree	17	11.04
Strongly disagree		
Do not communicate about condom use		
	43	28.29
Strongly Disagree	41	26.97
Disagree	11	7.24
Somewhat Disagree	12	7.89
Neither agree nor disagree	11	7.24
Somewhat agree	17	11.18
Agree	17	11.18
Strongly Agree		

Description of Satisfaction with HCPs

In order to obtain a common metric of the associations between the three satisfaction items, correlation analyses were conducted. Findings revealed that only two of the three satisfaction items (satisfaction with medical services and satisfaction with HIV prevention services) were significantly correlated to each other (see Table 5). In order to determine if the satisfaction with HCP items had adequate reliability or precision as a single scale of satisfaction with HCPs, we again used Cronbach's alpha. The satisfaction items had very low reliability (Cronbach's alpha = .33) and therefore were not used in the analysis as a scale. As a result, the satisfaction items were treated as three separate variables for the analysis as there were no other items from the survey that measured satisfaction with HCPs.

Overall, participants reported favorable satisfaction with their HCPs based on the three satisfaction variables (see Table 6). Satisfaction with medical services was relatively high with approximately 88% (n = 140) reporting satisfaction with the medical services that they received from their HCPs. A majority of participants (65%, n = 101) reported that they were satisfied with the HIV prevention services that they received from their HCPs, and 62% (n = 95) reported satisfaction with the social support services that they received from the clinic.

Table 5
Correlations between mean scores of satisfaction variables (N=157)

Variables	1	2	3
1 Satisfaction with Medical services	--	--	--
2 Satisfaction with Social support services	.04	--	--
3 Satisfaction with HIV prevention services	.35***	.01	--

***Correlation significant at $p<.01$ (two-tailed)
**Correlation significant at $p<.05$ (two-tailed)
*Correlation significant at $p<.100$ (two-tailed)

Table 6
Summary of Reported Satisfaction with HCPs (N = 157)

Variable	N	%
Satisfaction with medical services		
Strongly Agree	89	58.55
Agree	46	30.26
Somewhat agree	5	3.29
Neither agree nor disagree	5	3.29
Somewhat disagree	2	1.32
Disagree	1	0.66
Strongly disagree	4	2.63
Satisfaction with HIV prevention services		
Strongly Agree	36	23.38
Agree	37	24.03
Somewhat agree	28	18.18
Neither agree nor disagree	17	11.04
Somewhat disagree	3	1.95
Disagree	16	10.39
Strongly disagree	17	11.04
Satisfied with social support services		
Strongly Agree	42	28.38
Agree	42	28.38
Somewhat disagree	7	4.73
Neither agree nor disagree	16	10.81
Somewhat disagree	7	4.73
Disagree	23	7.43
Strongly disagree	9	15.54

Relationships between Demographic Variables, Participant Characteristics, and Satisfaction with HCPs

Preliminary analyses were conducted to determine which variables should be controlled for in subsequent analyses. Demographic variables were also investigated to identify significant correlations with the satisfaction variables. In order to examine the relationship between demographic variables, participant health characteristics, and satisfaction with HCPs, either a Pearson or non-Pearson correlational coefficient was computed (see Tables 7-8). Several variables were significantly correlated with the satisfaction variables. Having less than or a high school diploma or GED was significantly correlated with satisfaction with medical services. In addition, number of clinic visits, heterosexual identification, education of more than high school, communication about sex, and communication about condom use were significantly correlated with satisfaction with social support services. Reporting an income between $40,000-$60,000, education beyond high school, and self reported health status were significantly correlated with satisfaction with HIV prevention services.

Table 7
Summary of Spearman Correlations between numeric variables and satisfaction scales

	Satisfaction with		
	Med. Services	Soc. Support Services	HIV Prevent Services
Age	-.02	-.11	-.05
Number of visits	.01	.22***	-.10
Most recent CD4 count	-.02	-.15	.06
Self reported health status	.16**	-.03	.17**
Communication about Sex	.05	-.21 ***	-.06
Communication about HIV transmission	-.17	-.07	-.15
Communication about Condom Use	-.06	-.24***	-.03

***Correlation significant at $p<.01$ (two-tailed)
**Correlation significant at $p<.05$ (two-tailed)
*Correlation significant at $p<.100$ (two-tailed)

Table 8
Summary of Means ± SD for satisfaction scales as a function of categorical variables.

		Satisfaction with		
	N	Med. Services	Soc. Support Services	HIV Prevention Services
Education				
LT High School	73	6.49 ± 1.2[a]	4.36 ± 2.3[a]	6.27 ± 1.5
HS/GED	53	4.36± 2.4 [a]	4.91± 2.1	6.16± 1.1 [a]
More than HS	31	6.55 ± 0.9	5.78 ± 1.6 [a]	6.59 ± 0.63
Income				
$10,000 OR LESS	115	6.39 ± 1.2	4.84 ± 2.3	6.3 ± 1.2
$10,001 to $20,000	22	6.57 ± 0.7	5.14± 1.8	6.48± 0.9
$20,001 to $40,000	13	5.77± 1.8	4.84 ± 1.7	5.77 ± 1.7
$40,001 to $60,000	4	5.55 ± 2.4	1.0 ± 0	6.25 ± 1.5[a]
$ 60,001 to $80,000	2	7.0 ± 0	6.5± 0.7	6.5± 0.7
Over $80,000	1	7.0 ± 0	1.0 ± 0	7.0 ± 0
Health Insurance - yes	146	6.38 ± 1.18	4.78 ± 2.2	6.28 ± 1.3
Viral Load Detectable - yes	82	6.37 ± 1.3[a]	4.89± 2.2	6.32± 1.1
Any Drug Use in last 30 days-yes	38	6.31± 1.34	4.84 ± 2.2	6.36 ± 1.2
Heterosexual Orientation- yes	130	6.3 ± 1.3	4.63 ± 2.2[a]	6.3 ± 1.2
Current Medication -yes	77	6.39 ± 0.9	4.56± 2.3	6.42± 1.1

a: $p > 0.05$

Description of Condom Use among the Sample

Condom use is the second outcome variable of this study, defined for sexually active women only. The baseline condom use variable was the proportion of protected sexual acts divided by the total number of protected and unprotected sexual acts. It was assumed when participants said that they had protected sex that they used condoms when having sex. The original condom use construct was a continuous variable with a range of values between 0 (meaning participants reported having protected sex 0% of the time) and 1 (meaning participants had protected sex 100% of the time. However, it had a bimodal distribution with the majority of the sample having values of either a 0 or a 1. Therefore, I decided to dichotomize the variable using the value of 0.5 as a cut-off; "0" means the participants had protected sex less than half the time and "1" means that participants had protected sex 50% of the time or more. Analyses revealed that forty three participants reported using condoms at least 50% of the time (n = 43).

Because the condom use variable could only be defined for sexually active women, there was a lot of missing data. Data analysis revealed that almost half of the sample (n = 67; 43%) reported not having sexual intercourse at baseline. About 1/3 of the participants reported that they were not sexually active (n =52) while others reported that they were sexually active but did not indicate any instances of sexual intercourse (vaginal or anal) (n =15). Also, twenty eight participants reported being sexually active but did not report either the number of protected sexual encounters or the number of unprotected sexual encounters and therefore had a missing value for the condom use variable (N=28). Since a large portion of the sample was not sexually active or had unknown condom use, the condom use variable was based on a small sample of 62 women. Given the small sample, it was difficult to conduct further analyses of the effects of satisfaction with HCPs on condom use.

Sexually active and inactive women were compared on available demographic variables. Additional analyses revealed that sexually active participants were younger (p = .010), more likely to use drugs (p = .0056), and had a mean number of 2.44 sexual partners.

Relationships between Demographic Variables, Participant Characteristics, and Condom Use

Demographic variables and participant health characteristics were also investigated to identify significant correlations with condom use. To examine the relationship between demographic variables, participant health characteristics, and satisfaction with HCPs, either a Pearson or non-Pearson correlational coefficient was computed. As shown in Table 9, none of the demographic variables nor the participant health characteristics were significantly associated with condom use.

Table 9
Baseline Sociodemographic and Health Characteristics of Sample by Condom Use Outcomes (n=43)

Variable	No Condom Use	Condom Use 50% of the time	p
Age: mean (SD)	38.63 (6.0)	38.05 (7.63)	.76
Education:			.40
Less than High School: N yes (%)	5 (26%)	19 (44%)	
High School/GED: N yes (%)	10 (52%)	16 (37%)	
More than HS: N yes (%)	4 (21%)	8 (19%)	
Income level			.93
$10,000 OR LESS (N, %)	13 (68%)	31 (72%)	
$10,001 to $20,000 (N, %)	3 (16%)	4 (9%)	
$20,001 to $40,000 (N, %)	3 (16%)	4 (9%)	
$40,001 to $60,000 (N, %)	–	2(5%)	
$ 60,001 to $80,000 (N, %)	–	2(5%)	
Patient has health insurance- N yes (%)	19 (100%)	40 (93%)	.98
Number of visits for HIV care	4.58 (6.64)	4.56 (9.22)	.99
Health Status			
Excellent: N yes (%)	3(15%)	7 (16%)	
Good : N yes (%)	11 (5%)	20 (46%)	
Fair : N yes (%)	5 (26%)	16 (37%)	.76
Viral Load Detectable – N yes (%)	13 (81%)	24 (66%)	.35
Most recent CD4 count: Mean (SD)	310.92(253.31)	482.77(444.50)	.21
Current Medication Use- N yes (%)	9 (60%)	20 (63%)	.87
Drug Use- N yes (%)	5 (26%)	9 (22%)	.71

Hypotheses Tests

Ordinary Least Squares (OLS) and binary logistic regression models were generated to test the study's hypotheses. Seven regression models were used to determine the relationships between the predictor variables and the outcome variables.

> *Hypothesis 1:* Participants who report more communication with their HCP, more positive evaluations of their health, current use of HIV drug therapy, an undetectable viral load, higher CD4 counts, and lower rates of illegal drug use will report higher levels of satisfaction with their HCPs than participants who rate their health more negatively, are not currently taking HIV drug therapy, have a detectable viral load, have lower CD4 counts, higher rates of drug use, and report less communication with their HCP.

In order to test hypothesis 1, OLS regression models were used to assess whether participant characteristics had an effect on satisfaction with HCPs. A separate OLS regression was used to assess the effect of each participant characteristic on each of the three satisfaction variables (see columns 1-3 in Table 10). Table 10 shows the effect of the dependent variables (satisfaction with HCPs) regressed on the independent variables (participant characteristics). None of the participant characteristics significantly predicted participant satisfaction with medical services ($p > .05$, see column 1 in Table 10), satisfaction with social support services ($p > .05$, see column 2 in Table 10), or satisfaction with HIV prevention services ($p > .05$, see column 3 in Table 10). Thus, hypothesis #1 was not supported.

Table 10

Summary of Regression Analysis for Participant Characteristics as Predictors of Satisfaction with HCPs (N= 157)

Variable	Satisfaction with medical services			Satisfaction with social support services			Satisfaction with HIV prevention services		
	β	SE	p	β	SE	p	β	SE	p
Self-Report Health Status	.089	.088	0.31	-.061	0.16	0.70	0.13	.089	0.15
Current Medication Use	0.54	0.22	0.81	-0.25	0.43	0.56	-.021	0.19	0.91
Detectable Viral Load	0.15	0.23	0.52	-0.15	0.42	0.70	-.061	0.19	0.75
CD4 count	.000	.000	0.53	-.000	.000	0.17	.000	.000	0.75
Drug Use	-.070	0.24	0.77	-0.14	0.44	0.76	-0.12	0.19	0.53
Rsquare	0.004			0.020			0.009		

Note: each column provides results from the set of regressions using one of the 3 satisfaction variables as the dependent variable

To further test hypothesis 1, OLS models were generated to examine the effect of the communication variables on each satisfaction variable. A separate OLS regression was used to assess the effect of each communication variable on each of the three satisfaction variables (see columns 1-3 in Table 11). OLS models were used to examine the relationship between each communication and satisfaction variable. Table 11 shows the effect of the dependent variables (satisfaction with HCPs) regressed on the independent variables (communication with HCPs). None of the communication variables significantly predicted participant satisfaction with medical services ($p > .05$, see column 1 in Table 11), satisfaction with social support services ($p > .05$, see column 2 in Table 11), or satisfaction with HIV prevention services ($p > .05$, see column 3 in Table 11). Therefore, this hypothesis is not supported.

Table 11
Summary of Regression Analysis for Communication with HCPs as Predictors of Satisfaction with HCPs (N= 157)

Variable	Satisfaction with medical services			Satisfaction with social support services			Satisfaction with HIV prevention services		
	B	SE	p	*B*	SE	p	*B*	SE	p
Do not discuss sex with provider	-.060	.047	0.20	-.130	.085	0.13	-.006	.048	0.90
Do not discuss risk of HIV transmission to others	-.069	.049	0.17	-.057	.091	0.54	-.064	.050	0.21
Subject of condoms does not come up in HIV care visits	-.079	.047	0.09	-.151	.085	0.08	-.033	.048	0.50
Rsquare	.018			0.021			0.003		

Note: each column provides results from the set of regressions using one of the 3 satisfaction variables as the dependent variable

Hypothesis 2: Participants who report higher levels of satisfaction with their HCP will report higher levels of condom use in comparison to women who report lower levels of satisfaction.

Logistic regression models were used to assess the effect of each satisfaction variable on condom use. Table 12 shows the effects of the independent variables (satisfaction with HCPs) on the dependent variable (condom use 50% of the time). None of the satisfaction variables significantly predicted condom use 50% of the time ($p > .05$, see Table 12). Therefore, hypothesis #2 is not supported.

Table 12

Summary of the Regression Analyses of Satisfaction with HCPs as the Predictors of Condom Use (n = 43)

Variables	Condom Use 50% of the time		
	B	SE	*p*
Satisfaction with medical services	.025	0.189	0.89
Satisfaction with social support services	0.103	0.744	0.89
Satisfaction with HIV prevention services	-.262	.322	0.42
R square	.012		

Note: each column provides results from the set of regressions using condom use 50% of the time as the dependent variable.

Hypothesis 3: Satisfaction with HCP will mediate the relationship between participant characteristics and condom use.

Pursuant to the Baron and Kenny (1986) model of mediation, the presence of mediation would be assessed by running three regression models: 1) condom use as the dependent variable with participant characteristics as the independent variables; 2) satisfaction with HCPs as the dependent variable with participants' characteristics as the independent variables; and 3) condom use as the dependent variable and satisfaction with HCPs as the independent variable. Participant characteristics were not found to be significantly associated with condom use, using condoms 50% of the time or more (binary variable). Each relationship was examined by performing a separate logistic regression of condom use on each participant characteristic (see Table 13). Since there were no significant relationships found between any participant characteristic variable and condom use ($p > .05$), there was no effect to be mediated and therefore further mediation analyses were not warranted or performed.

Table 13

Summary of Regression Analysis for Participant Characteristics as Predictors of Condom Use (*n*= 43)

Variable	Condom use 50% of the time		
	B	SE	*p*
Health Status	-.116	.245	0.74
Combination HIV therapy use	.105	.641	0.87
Detectable Viral Load	-.687	.737	0.35
CD4 count	.001	.001	0.21
Drug Use	-.239	.643	0.71
Rsquare	0.000		

Note: each column provides results from the set of regressions using condom use 50% of the time as the dependent variable.

Hypothesis 4: Satisfaction with HCPs will mediate the relationship between communication with HCPs and condom use.

For this hypothesis, the presence of mediation would be assessed by running three regression models: 1) satisfaction with HCPs as the dependent variable with communication as the independent variable; 2) condom use as the dependent variable with communication as the independent variable; and 3) condom use as the dependent variable with satisfaction with HCPs and communication with HCPs as the independent variables. Each relationship was examined by performing a separate logistic regression of condom use on each communication variable (see Table 14). Since there were no significant relationships found between any communication variable and condom use ($p > .05$), there was no effect to be mediated and therefore further mediation analyses were not warranted or performed.

Table 14
Summary of Regression Analysis for Communication with HCPs as Predictors of Condom Use (*n*= 43)

Variables	Condom Use 50% of the time		
	B	SE	*p*
Communication about sex	.250	.157	.11
Communication about risk of HIV transmission	-.086	.154	.58
Communication about condom use	.028	.133	.83
R square	.001		

Note: each column provides results from the set of regressions using condom use 50% of the time as the dependent variable.

Summary of Results

Results from this study demonstrate that the study's participants had high levels of satisfaction with their HCPs in all three aspects of care analyzed: medical services, social support services, and HIV prevention services. The study also found that participants reported communication with their HCPs about very personal and stigmatized topics including sex, condom use, and transmission of HIV. However, the study did not find any significant relationships between psychosocial/health characteristics and satisfaction with HCPs. The study also did not find significant relationships between satisfaction with HCPs and condom use.

CHAPTER 5: DISCUSSION

As the numbers of women with HIV/AIDS increases, healthcare providers (HCPs) will continue to be responsible for providing care to women living with HIV/AIDS. People with HIV/AIDS (PLWHA) require a health care continuum that links medical and social services among different disciplines and across multiple care settings. As a result, satisfaction with healthcare and the quality of relationships between patients and HCPs has been linked to health outcomes of PLWHA in numerous studies (Apollo et al., 2006; Burke-Miller et al., 2006; Heckman et al., 2004; Roberts, 2002; Schneider et al., 2004; Sullivan et al., 2000). Recent research has focused on the relationships between satisfaction with healthcare and health outcomes including medication adherence (Burke-Miller et al., 2006; Roberts, 2002; Schneider et al., 2004). However, the current patient satisfaction literature base lacks research on relationships between satisfaction with HCPs and sexual behaviors in general, and between satisfaction with HCPs and the sexual risk behaviors of women living with HIV/AIDS in particular.

This dissertation aimed to assess the relationships between psychosocial and health characteristics, satisfaction with HCPs, and condom use among a clinic-based sample of African American women living with HIV/AIDS. Given the limited research on satisfaction with HCPs among African American women with HIV/AIDS, a key goal of this study was to provide new information about what variables are associated with satisfaction with HCPs and to examine whether satisfaction with HCPs had an impact on condom use. The study investigated psychosocial and HIV health characteristics to assess relationships with satisfaction with HCPs. The majority of women in the study reported a high degree of satisfaction with their HCPs, as

well as communication with their HCPs about sensitive topics such as sex and condom use. Results from preliminary statistical analyses showed, however, no significant relationships between participant characteristics including communication, drug use, health status, CD4 count, and viral load.

Another goal of the dissertation was to explore a model of satisfaction in which the relationship between participant characteristics and condom use was hypothesized to be mediated by satisfaction with HCPs. Statistical criteria for mediation were not met, however, as satisfaction was not significantly associated with any of the participants' characteristics or condom use. Thus, mediation analyses were not conducted.

Review of Findings

Satisfaction

Several examinations of satisfaction among racial and ethnic minority patients, including among PLWHA, have found them to be less satisfied with their healthcare in comparison to White patients (Stein et al., 1993; Stone et al., 1995). For example, one study found that African American HIV positive women reported being less satisfied with their healthcare (Sullivan et al., 2000) in comparison to White women. In contrast to these previous studies, this dissertation's results showed that the majority of the women reported high levels of satisfaction with medical services (88%), satisfaction with social support services (62%), and satisfaction with HIV prevention services (89%). It is possible that the results could be confounded by the relationships between the HCPs and the participants because many of the study's participants were prior patients of the PCCP clinic. Long term relationships with HCPs may have inflated their ratings of satisfaction as integrated health care units have been found to be associated with greater

patient satisfaction with care (van Sevellnen, Lewis, Leaker, & Schweitzer, 1991). PCCP is an integrated clinic in the sense that it provides comprehensive, integrated HIV services, including primary care, case management, nutrition counseling, pharmacy, mental health, family planning, and addiction services (Teti et al., 2007). Regardless, ratings of satisfaction among the participants were higher than expected based on the current literature base of satisfaction for people with HIV/AIDS.

Also, it should be noted that there were differences among the sample in regards to reported satisfaction with the different aspects of care (i.e. medical services, HIV prevention services, and social support services). For example, reported higher education and income levels were significantly associated to satisfaction with social support services. It is possible that women with more education and income have the desire to be more engaged in the social services and participate more often in this specific aspect of their healthcare. Also, women who identified as heterosexual were more satisfied with social support services. A possibility is that heterosexual women may feel that the social support services provided are tailored to their specific needs. Also, women with less education were more satisfied with medical services. Women with less education may be more focused on their medical services whereas women with a higher education are more focused on the social services of their healthcare. More research (both qualitative and quantitative) is needed to understand better the relationship between patients' sociodemogrpahic characteristics and satisfaction with HCPs.

The role of satisfaction with HCPs requires further study, as this is one of the first studies to find high rates of satisfaction among African American women living with HIV/AIDS. If this finding is replicated, it may have implications for patient provider relationships and health outcomes of women living with HIV/AIDS. Given that a majority of women reported high

ratings of satisfaction with medical services, support services, and HIV prevention services, it would appear that the HCPs and the staff are providing a very high level standard of care to the patients in the clinic. The PCCP may have a model of care that can be replicated by other clinics providing care to women with HIV.

Hypothesis Testing

Hypothesis #1: Participants Characteristics and Satisfaction with HCPs

The first hypothesis examined the relationship between participant health characteristics and satisfaction with HCPs. Results revealed that none of the characteristics were significantly correlated with satisfaction with HCPs. Thus, participants were satisfied with their healthcare regardless of their reported health status, medication therapy use, illegal drug use, CD4 count, and viral load. The non-significant findings are not consistent with previous literature which suggests a relationship between psychosocial and health characteristics and satisfaction with healthcare (Burke-Miller et al., 2006; Burke, 2003; Stein et al., 1993; Stone et al., 1995; Sullivan et al., 2000). It is possible that the analyzed variables -- heath status, CD4 count, viral load, medication therapy use, and illegal drug use -- may not be the only factors that influence satisfaction with HCPs as aspects of patient provider relationships. Other factors which have been found to have an influence on satisfaction with HCPs among PLWHA such as collaboration, support, affect, and empathy (Apollo et al., 2006; Gerbert, Love et al., 1999; Kaplan et al., 1995; Sullivan et al., 2000) may have greater influence on patience satisfaction with HCPs than the variables analyzed in this dissertation.

The first hypothesis also examined the relationship between communication and satisfaction with HCP. As a whole, the sample reported high ratings of communication with their

HCP about sensitive topics including sex (59%), condom use (63%), and transmission of HIV (66%). Although it was hypothesized that communication with HCPs would be significantly correlated with satisfaction with HCPs, results found no statistically significant relationship. Therefore, participants were satisfied with their healthcare irrespective of their ratings of communication with their HCPs.

The non-significant findings are not consistent with previous studies that suggest relationships between communication with HCPs and satisfaction with healthcare among PLWHA (Apollo et al., 2006; Gerbert, Love et al., 1999; Marelich & Murphy, 2003; Wilson & Kaplan, 2000). However, ratings of communication among the participants were higher than expected based on the current literature base. Negative communication experiences and difficulty discussing stigmatized behaviors with HCPs have been noted among PLWHA (Curtis & Patrick, 1997). Stigma and discrimination continue to be realities for HIV positive patients in ways that may prevent some HIV positive individuals, particularly women who fear judgment and stigma (Bova, 2000), from discussing sensitive topics with their HCPs. Thus, this finding is encouraging as it demonstrates that African American women living with HIV/AIDS can feel comfortable discussing very personal and stigmatized issues including sex and condom use with their HCPs. As mentioned earlier, the PCCP may have a standard of care that includes enhanced communication between patients and HCPs about personal behaviors. This can have positive implications for African American women living with HIV/AIDS as improved patient-provider communication has been found to help facilitate protective sexual behavior among PLWHA (Fehringer, et. al, 2006). Thus, more research exploring relationships between communication and satisfaction with HCPs is warranted.

Hypothesis 2: Satisfaction with HCPs and Condom Use

Hypothesis 2 was that participants who reported higher levels of satisfaction with their HCP would report higher levels of condom use in comparison to women who reported lower levels of satisfaction. The results indicated that there was no significant relationship between satisfaction with HCPs and condom use. Among the sample, only 39% reported sexual activity (anal or vaginal intercourse) at baseline. Due to the lack of reported sexual activity and condom use among the sample, the condom use variable had to be dichotomized to a binary variable. The majority of women who noted that they were sexually active also reported using condoms 50% of the time (69%). However, due to the small number of participants who reported sexual activity, there was not enough variability in the available sample for a meaningful analysis of the effects of satisfaction levels on condom use.

Because so many women diagnosed with HIV/AIDS continue to be sexually active (Bova & Durante, 2003), the reported frequency of lack of sexual activity among the sample was unexpected. It is possible that the original study's data collection method influenced the underreporting of sexual behavior among the sample. Specifically, although ACASI has been found to be a reliable tool for collecting data about sexual behavior (Turner et al., 1998), it is possible that the wording of the sexual behavior questions on the survey may have confused the participants so much that they answered the sexual behavior questions inaccurately.

Although this dissertation was unable to demonstrate associations between satisfaction with HCPs and condom use, relationships between satisfaction and other health outcomes among PLWHA including active involvement in healthcare, health decisions making, and medication adherence have been reported among PLWHA.(Roberts, 2002; Schneider et al., 2004). A

qualitative study of relationships with HCPs among PLWHA and the influence of these relationships on patients' sexual risk behaviors found that enhanced collaboration with HCPs resulted in reduced risky sexual behaviors among the sample (Gerbert, Love et al., 1999). The relevance of this study to the present study nothwithstanding, this study is nonetheless limited. First, because it was a qualitative study, it is impossible to test relationships between the variables. Second, since the majority of the participants were men, it is unclear to what extent the study's findings relate to women. Moreover, the study did not assess condom use nor specify which sexual risk behaviors were reduced. Thus, more research (both qualitative and quantitative) is needed to understand better the relationship between patients' relationships with HCPs and sexual risk behaviors.

Given that a number of health outcomes, such as involvement in healthcare and medication adherence, have been shown to have an association with satisfaction with HCPs(Burke-Miller et al., 2006; Roberts, 2002; Schneider et al., 2004), it is possible that the relationships may be found only among outcomes that participants can directly control. For example, involvement in healthcare and medication adherence are under the sole control of the participants whereas condom use for women typically requires negotiation with a male partner (Amaro, 1995). According to Auerbach (2004) negotiation of condom use requires interpersonal skills, communication skills, and comfort levels that all women do not have (Auerbach, 2004). Moreover, researchers examining condom use have proposed that gender-based power imbalances constrain women's ability to negotiate safer sex (Amaro, 1995; Pulerwitz, Amaro, De Jong, Gortmaker, & Rudd, 2002; Wingood & DiClemente, 1998). Since condom use is not directly under a woman's control, it is possible that satisfaction with HCPs may not have an influence on condom use behaviors. Another possible explanation for the lack of significant

findings is that the sample size may have simply been too small to detect meaningful relationships between the variables of satisfaction with HCPs and condom use.

Hypothesis 3: Satisfaction as a mediator between participant characteristics and condom use

Hypothesis 3 asserted that satisfaction with HCPs would mediate the relationship between participant characteristics and condom use. As stated earlier, this study did not find significant associations between satisfaction and condom use. Further, none of the participant health characteristics (i.e., health status, illegal drug use, CD4 count, and viral load) were significantly correlated to condom use. Thus, criteria for mediation analysis were not met and further analyses were not conducted. As mentioned, the small sample size of sexually active participants may have made it difficult to assess relationships between the variables in the proposed mediation model. Thus, it is possible that a larger sample size may have found that satisfaction was a mediator between participant characteristics and condom use.

Hypothesis 4: Satisfaction as a mediator of communication with HCP and condom use

Hypothesis 4 asserted that satisfaction with HCPs would mediate the relationship between communication with HCPs and condom use. As mentioned earlier, the current study did not find significant associations between satisfaction and condom use. Further, none of the communication variables (i.e., communication about condom use, communication about sex, and communication about transmission of HIV) were significantly correlated to condom use. Thus, criteria for mediation analysis were not met and further analyses were not conducted. As mentioned earlier, the small sample size of sexually active participants made it difficult to assess relationships between variables in the proposed mediation model. Thus, it is

possible that further studies with a larger sample size may lend to satisfaction with HCPs being a mediator between communication with HCPs and condom use.

Limitations

Contrary to existing literature indicating dissatisfaction with medical care among racial and ethnic minority patients including those living with HIV/AIDS, high levels of satisfaction with HCPs and favorable communication about personal, stigmatized topics were reported among this sample of African American women living with HIV/AIDS. Although the current study provides meaningful information related to satisfaction with HCPs among African American women living with HIV/AIDS, there are limitations to the study's design, measures, sample size, and data collection methods.

Reliability of measures

A definite limitation of this study was the reliability of the measures. A major focus of this study was to demonstrate the relationships between participant health characteristics and satisfaction with HCPs. I anticipated that I could derive a global satisfaction score from the satisfaction related items in the baseline survey. Analyses showed that the satisfaction items were not reliable as a scale. Instead, the three satisfaction items were used separately to assess different aspects of satisfaction with HCPs. Unlike single item measures, multiple item measures capture more information and are more likely to tap all facets of the construct of interest (Baumgartner & Homburg, 1996). However, there were no other items from the baseline survey that could be used to measure satisfaction with HCPs.

Previous satisfaction studies have utilized reliable measures to assess relationships between participant characteristics and satisfaction with healthcare including the RAND Patient Satisfaction Questionnaire, PSQ 18 (Marshall & Hays, 1994). This instrument has been used in numerous studies supporting its validity and reliability in a variety of patient populations (Harris, Luft, Rudy, & Tierney, 1995; Maly, Frank, Marshall, Dimatteo, & Reuben, 1998; Pascoe, 1983; Ross, Steward, & Sinacore, 1995) including people with HIV/AIDS (Burke-Miller et al., 2006; Burke, 2003; Katz et al., 1997; Stein et al., 1993). The PSQ 18 includes 18 items that measure specific aspects of satisfaction including general satisfaction, technical quality, interpersonal communication, time spent with provider, accessibility, communication, and financial aspects of care. Responses can be aggregated into a single subscale reflecting satisfaction with one's provider care (Marshall, Hays, Sherbourne, & Wells, 1993). Because this dissertation involved the analysis of previously collected data, reliable and valid measures such as the PSQ-18 could not be used. However, future studies examining satisfaction with HCPs among PLWHA should consider utilization of this or other psychometrically validated measures of satisfaction.

Another goal of the dissertation was to assess the association between communication and satisfaction with HCPs. Analyses showed that the communication items were not reliable and thus, the three communication items were assessed separately. Previous studies examining patient communication among PLWHA have utilized reliable and valid communication measures. For example, Wilson and Kaplan (2000) utilized two highly reliable measures to assess patient communication with HCPs – a five item patient communication measure (Cronbach's alpha = 0.93) and a HIV specific communication measure that included questions about communication about alcohol, drug use, and sexual behaviors (Cronbach's alpha = 092). Since this dissertation involved a secondary data analysis, reliable communication measures

could not be used. In future studies, utilization of reliable communication measures may show a significant relationship with satisfaction with HCPs.

In this dissertation, none of the psychosocial and health characteristics were significantly associated with satisfaction with HCPs. Thus, reliability of self-reports of the measures should be considered. Although self-reported data of CD4 count and viral load have been found to be reliable (S.C. Kalichman et al., 2000), it is possible that participants may not have been accurate because of memory lapses. That is, participants may have simply forgotten their most recent CD4 count and viral load. Other studies have utilized medical chart review (Burke-Miller et al., 2006; Schneider et al., 2004; Sullivan et al., 2000) or have obtained blood samples on the day of the interview to ascertain CD4 count and viral load (Burke, 2003). Thus, future studies might use these methods to obtain more accurate CD4 and viral load data.

The reliability of the drug use questions for future studies should be explored as well. In regards to illegal drug use, urinalysis testing has been used to confirm the reliability and validity of self reported drug use (Darke, 1998; Johnson et al., 2000; Weatherby et al., 1994). According to Johnson and colleagues (2000), there is a possibility that participants are more honest about their drug use when they know a urinalysis is being conducted. In the original study, urinalysis testing was not conducted to confirm self reported drug use. This could be a method used to confirm the self report of drug use from the participants.

Internal Validity

Internal validity refers to the extent to which it is possible to determine whether or not an independent variable has truly influenced the dependent variable (Polit & Hungler, 1999). This

dissertation was a secondary data analysis, thereby limiting the extent to which other variables that may be associated with satisfaction with HCPs such as time spent with HCP, discrimination from HCPs, and trust (Safran, Kosinski, & Arlov, 1998; Stone, 2004; Warde, 2001) could be analyzed. Specifically, none of these other possible predictors of satisfaction with HCPs were included in the original baseline survey. Also, literature has shown that specific attributes of the patient/provider relationship such as perception of HCP's empathy, knowledge, comfort discussing personal issues, decision making style, support, and collaboration (Apollo et al., 2006; Gerbert, Love et al., 1999; Kaplan et al., 1995; Sullivan et al., 2000) have been linked to satisfaction with HCPs among PLWHA. For example, Sullivan and colleagues (2000) found that patients who perceived their HCP to be empathetic and more knowledgeable were more satisfied with their HCP than patients who reported their HCPs to be less knowledgeable and empathetic.

In addition, after HCP knowledge and empathy were taken into account, the characteristics of the patient and the characteristics of the provider did not explain the significant variation in satisfaction with the primary care physician (Sullivan et al., 2000). Since this dissertation was a secondary data analysis, other aspects of the HCP/patient relationship that may have predicted satisfaction with HCPs such as such as empathy, collaboration, HCP knowledge, decision making style, and support (Apollo et al., 2006; Gerbert et al., 1999; Kaplan, Gandek , Greenfield, Rogers, & Ware, 1995; Sullivan et al., 2000) could not be analyzed. Future research on these topics as possible predictors of satisfaction with HCPs is therefore warranted.

Sexual Behavior Measures

The validity of the self reported sexual behavior items could have been another limitation as reported sexual activity among the sample was very low. The small sample size of sexually active participants made it difficult to address the relationships between participant

characteristics, satisfaction, and condom use in any statistically meaningful ways. Given the possible underreporting of sexual behavior, attention needs to be placed on the methods of obtaining sexual behavior information from participants living with HIV/AIDS. The original study utilized ACASI to obtain sexual behavior information from the participants. The reliability and validity of data collected using ACASI has been examined in several populations (e.g., men, men who have sex with men, women, adolescents, HIV-positive individuals, and substance users) (Gribble, Miller, Rogers, & Turner, 1999; Murphy, Durako, Muenz, & Wilson, 2000; Van Griensven et al., 2001) and has also been shown to increase the accuracy of self-reported data about risky sexual behaviors (Turner et al., 1998).

Improving the methods of ACASI administration might facilitate more accurate reporting of sexual behavior. In the original study, the ACASI was administered to the women in a private space in the waiting room of the clinic. A private room in the clinic for administration of the ACASI might have increased the comfort of participants and have resulted in more accurate reporting of their sexual behaviors. Also, in the original study, the intervention specialist administered the ACASI. Having the ACASI administered by separate data collectors and not the research staff may decrease the participants' perceptions that research staff members are being judging their sexual behaviors. Thus, another recommendation is to have separate data collectors administer the ACASI and not research staff members with extended contact with participants.

Phrasing and sequencing of questions was another weakness of the sexual behavior measures. Terminology used for assessing risky behaviors have been found problematic particularly among groups with a lower socioeconomic status (Weinhardt, Forsyth, Carey, Jaworski, & Durant, 1998). In the baseline survey sexual behavior items were inconsistently

worded. As a result, participants could have been confused by the sexual behavior questions. For example, the vaginal intercourse question asked, "How many times did you have vaginal sex with HIV positive partner(s)? This would be with or without a condom and whether or not you ejaculated." Considering that women do not ejaculuate, it is evident that the sexual behavior questions were designed for men and not tailored for the women in the study. It is quite possible that the participants were confused by these questions and it could have affected their responses.

A subsequent question asked, "How many times was a condom used?" It may have been confusing to participants to be asked how many times they had sex with **or** without a condom. In order to provide enhanced clarity, it would have been better to first ask participants how many times they had sex and in a separate question ask how many times they used a condom. In lieu of this question, participants could have been asked the following: "In the past 6 months, how many times did you have sexual intercourse with a HIV positive partner?" and "Out of these times, how often did you use male condoms?"

Recall of sexual behaviors in the past 6 months could have been a challenge for participants. Kauth and colleagues (1991) tested the reliability of 2-week, 3-month, and 1-year reporting of sexual behavior and found that participants tended to report reliably at 2-weeks and 3-months (Kauth, St.Lawrence, & Kelly, 1991). They recommend the use of shorter reporting time periods to improve self reports of sexual behavior. Factors such as forgetting, telescoping (distorting the recall of particularly memorable events) and exposure to misleading information can also contribute to inaccurate self-reports (Weinhardt et al., 1998) as was found for participants who reported that they were sexually active but did not indicate the number of times. Also, the use of techniques and tools such as appointment books and calendars to recall instances of vaginal or anal intercourse and providing anchor dates for reporting periods were not utilized

and may have helped participants recall periods of abstinence or sexual activities (Weinhardt et al., 1998). Since assessment of sexual behavior is limited to self-report, future studies should consider utilization of these methods to enhance the ability of participants to recall past sexual behavior.

Also, multi-site data collection would have provided a larger sample for investigation of the associations between satisfaction with HCPs and condom use. Studies that obtain large sample sizes often employ multiple sites in order to capitalize on a greater pool of eligible participants (Rotheram-Borus, Stein. J.A., & Lin, 2001). This notwithstanding, it is also possible that none of these issues were relevant to this study and that major limitation is simply that the majority of participants were not sexually active at baseline.

Study Design

The quantitative-solely design of this study may be another limitation. It is possible that the constructs used in the hypotheses do not have associations to satisfaction with HCPs among this particular sample. Thus, a mixed methods study that involved the use of qualitative methods such as in-depth interviews or focus groups may have been a more appropriate design for investigating new concepts, particularly associations between satisfaction with HCPs and reported condom use. The central premise of mixed methods research is the use of combined quantitative and qualitative approaches is better than either approach used in isolation (Creswell & Clark, 2007).

The benefits of mixed methods research in primary and secondary prevention of HIV are well established (Elford, Bolding, Davis, Sherr, & Hart, 2004; Mateu-gelabert et al., 2005;

Walden, Mwangulube, & Makhumula-Nkhoma, 1999). For example, a two-phase sequential design could be utilized in which the results from a qualitative component would be used to design an appropriate survey instrument for use in a subsequent quantitative component (Tashakkori & Teddlie, 1998). Focus groups and individual interviews could be used to understand the factors that influence satisfaction with HCPs and the degree to which satisfaction with HCPs influences sexual risk behaviors. This knowledge could be used to create specific questions to supplement a battery of standardized instruments for use in a quantitative assessment examining satisfaction with HCPs and its influence on condom use behaviors.

Phase I qualitative data could be obtained from focus groups and face-to-face, semi-structured interviews used to identify participants' past and current experiences with their HCPs, experiences as an African American women living with HIV/AIDS, and sexual behavior experiences. Focus groups are an effective method used to explore complex concepts, such as the factors that influence satisfaction and sexual risk behaviors. They also provide an opportunity for the group members to express their understanding and beliefs about a topic area in their own language (Cote-Arsenault & Morrison-Beedy, 1999)

Unlike focus groups, the intimacy of individual interviews is often used to gain more personal perspectives and a deeper understanding of issues (Seidman, 1998). Descriptive interviews could be conducted based on the focus group results to: 1) gain a deeper understanding of the focus group findings; 2) understand the validity of the drafted questions for the quantitative assessment; and 3) gain more in depth information about the factors that influence satisfaction with HCPs and whether satisfaction influences condom use behaviors. For example, qualitative data could reveal that women are more satisfied with HCPs who have a collaborative model of care and in turn a collaborative style could have a positive influence on

condom use behaviors. The findings could be used to clarify, add, or eliminate questions from the quantitative assessment. Also, this would be an ideal opportunity to obtain feedback on the phrasing and sequencing of questions in the quantitative assessment.

In Phase II, quantitative data could be collected and utilized to quantify the associations between participant experiences and satisfaction with HCPs and also associations between satisfaction with HCPs and condom use. In future studies, a mixed methods approach could provide a greater understanding of the context of satisfaction with HCPs among African American women living with HIV/AIDS and which aspects of satisfaction with HCP influence sexual behaviors.

External validity

External validity refers to the ability to generalize findings to other samples (Polit & Hungler, 1999). This dissertation was limited to the African American women recruited from the "Protect Respect" program in Philadelphia, PA (N=157). Although the sample reflected African American women living with HIV/AIDS in Philadelphia who access clinic services ,the small sample size and certain characteristics of the sample (i.e., SES, clinic based, urban setting) may limit the generalizability of these findings to other groups of African American women with HIV/AIDS (e.g., those in rural areas, those of higher SES, and non-clinic samples). Further research will be needed to understand if the findings from the current study are unique to the region or if they are generalizable to other groups of African American women living with HIV/AIDS who access clinic services for their HIV care.

Implications for Knowledge and Practice

Healthcare providers (HCPs) have been involved in the physical care of individuals living with HIV/AIDS for more than 20 years. Traditionally, HCPs have focused on treating the immediate medical needs of their patients. Most medical decisions were made without the full participation of the patient (Holman & Lorig, 2000). With the introduction of HAART, HCPs have faced a paradigm shift from providing guidance to working collaboratively with patients who are living with HIV (Indyk & Golub, 2005). People living with HIV are living longer and require a health care continuum that links medical and social services among different disciplines and across multiple care settings (Stein et al., 1993). As the number of people becoming infected with HIV continues to increase, relationships with HCPs will continue to be important for improving the health outcomes of PLWHA(Gerbert et al., 2006) .

With increasing rates of unprotected sexual activity among HIV-positive individuals, further research is warranted to understand the factors that encourage safer sex behaviors particularly among women who face barriers to engaging in safer sex behaviors such as negotiating condom use with male partners(Auerbach, 2004; Jemmott, Jemmott, & O'Leary, 2007) , fear of disclosure of their HIV status to partners (Gielen et al., 2000; Siegel et al., 2005), and substance abuse (Burnam et al., 2001; Lucas et al., 2001). Additional barriers to condom use include fear of partner rejection or violence, not knowing how to introduce the topic, and little knowledge of other birth control methods (Miller, Exner, Williams, & Ehrhardt, 2000).

Several studies suggest that awareness of the success of combination therapies has led to increased risky behavior among PLWHA (S. Catz, Meredith, K., Mundy, L. , 2001; Kalichman,

1998 ; S. Kalichman, Rompa, & Austin, 2002). Unsafe sex practices not only put partners at risk for secondary transmission but also put women living with HIV/AIDS at risk for contracting STIs. HIV positive women need assistance in tackling a multitude of barriers that prevent them from engaging in safer sex practices. Although HCPs may not be able to devote a lot of time to primary prevention efforts (Jemmott et al., 2007), they can tailor their model of care to enhance the satisfaction of their patients. The participants reported high ratings of satisfaction and communication with their HCPs from the PCCP. It is possible that the HCPs are engaging in a certain model of care that includes collaboration with the patient, trust, respect, empathy, and an environment that makes the participants feel comfortable enough to communicate about stigmatized behaviors. Thus, the PCCP could be a model of care for other clinicians providing HIV services to women living with HIV/AIDS. The PCCP could provide guidance and trainings to other HCPs on how to provide a model of care that will enhance the satisfaction of their patients.

An important implication of this dissertation is that the context of the HCP-patient relationship may positively influence satisfaction among women living with HIV/AIDS. Although, the dissertation's results did not find significant associations between psychosocial characteristics and satisfaction with HCPs, this area nonetheless warrants future study. Findings from this dissertation indicated that African American women living with HIV/AIDS can be satisfied with their HCPs. Future research efforts should examine interactions between patients and providers to understand the factors that influence positive evaluations of care. A suggested method would be to videotape clinic visits of the HCPs and patients to obtain an understanding of what happens during a visit that prompts satisfaction with HCPs. Of course, this would require permission from the participants and the HCPs and the need to protect the confidentiality of both

parties. However, examining the videos could also be a useful tool for training HCPs on how they should interact with patients in order to enhance their satisfaction.

Another area that deserves additional research attention is communication with HCPs among PLWHA. Findings from this dissertation indicated that African American women living with HIV/AIDS can have favorable communication with HCPs about personal, stigmatized topics. However, it did not reveal which specific aspects of communication influence satisfaction with HCPs. Previous studies have found HCP communication skills such as use of open-ended questions, negotiation, paraphrasing, less verbal dominance, asking for patient's opinion, and informativeness to be linked to satisfaction with HCPs among general populations (Lazare, Putnam, & Lipkin, 1995; Roter, 2000). Apollo and colleagues (2006) found that certain aspects of communication with HCPs including attentive listening, asking more questions, being open to patients knowledge, nonverbal communication, and shared decision to be important for positive relationships between HCPs and PLWHA (Apollo et al., 2006). Also, greater time spent with HCPs has been found to be associated to satisfaction with healthcare (Warde, 2001). Thus, further research examining the influence of the aforementioned aspects of communication on satisfaction with HCPs among African American women living with HIV/AIDS is warranted.

Another aspect of relationships between patients and providers that has been neglected is the perspective of the HCPs. Due to the small number of HCPs, I was unable to utilize data from the HCPs. However, a more in depth understanding from the perspective of HCPs would highlight their role in interactions with patients. It would be advantageous to hear from HCPs either in the form of focus groups or individual interviews, their experiences with patients, their suggestions for enhancing the satisfaction of HCPs, what they feel are the barriers to positive relationships with patients, and whether they perceive that a relationship exists between their

interactions with patients and condom use. This information could also be used for the development of training that focus on aspects of care (e.g., collaboration, support, empathy) that enhance relationships between HCPs and women living with HIV/AIDS.

Implications for Future Research

Findings from this study provide insight for future empirical endeavors. In the current study, African American women living with HIV/AIDS reported high ratings of satisfaction with their HCPs. However, satisfaction did not have any significant associations to condom use behaviors. Further research will be needed to understand if the findings from the current study are unique to this sample or whether they are generalizable to other samples. Multi-site data collection with the use of reliable and validated measures could provide a larger sample of African American women living with HIV/AIDS, thereby facilitating more meaningful statistical analyses and increasing external validity.

As discussed earlier, the use of reliable and validated measures to capture data about health characteristics, satisfaction with HCPs, and sexual behaviors from women living with HIV/AIDS is key for the examination of relationships between these variables. It may also prove useful to obtain and examine data about specific aspects of patient provider relationships such as, empathy, collaboration, support, and trust, factors that have been found to have significant associations to satisfaction with HCPs (Apollo et al., 2006; Gerbert, Love et al., 1999; Kaplan et al., 1995; Sullivan et al., 2000). This would enhance understanding of specific or universal factors that may promote satisfaction with HCPs among different groups of women. In order to obtain a more comprehensive understanding of satisfaction with HCPs among African American

women living with HIV/AIDS, prospective studies utilizing qualitative and quantitative components are needed.

Conclusion

This study provided insight into the assessment of satisfaction with HCPs and health outcomes among African American women living with HIV/AIDS. Overall, women reported high ratings of satisfaction and communication with their HCPs. This data affirm that contrary to the existing literature(Stein et al., 1993; Stone et al., 1995) ethnic minority patients with HIV can be satisfied with their healthcare and have communication with HCPs in ways that may have implications for their health behaviors, including condom use. Although this dissertation found no significant associations between satisfaction with HCPs and condom use, the study was conceptualized to address a gap in the satisfaction and HCP literature by exploring relationships between satisfaction with HCPs and condom use among women living with HIV/AIDS. This was one of the first studies to find high rates of satisfaction among African American women living with HIV/AIDS. In order to enhance the understanding of satisfaction among women living with HIV/AIDS, additional research should explore whether the context of the patient provider relationship influences satisfaction with HCPs.

Given the trend of increasing numbers of women with HIV/AIDS, HCPs will continue to be sought after for providing care to African American women living with HIV/AIDS. Since patient satisfaction may be able to influence the quality of care received and health outcomes of PLWHA, the goals of this study may be relevant and of value to HCPs. With the high ratings of satisfaction from this particular sample, it may be of value to examine interactions between HCPs and patients of the PCCP as it may inform the work of HCPs in other clinical settings. The growing number of African American women being diagnosed with HIV/AIDS and the

multitude of barriers they face to engaging in safer sexual behaviors mandates the need for more public health attention to this population. Thus, it is important to evaluate satisfaction with HCPs among women with HIV/AIDS and to examine factors that may lead to improved care and outcomes. Further analyses with a larger sample size, more reliable and validated measures, and a mixed methods approach may improve assessments of the associations between satisfaction with HCPs and sexual behaviors among African American women living with HIV/AIDS.

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Appendix A-Measures

Participant Characteristics

Participant Characteristic	Survey Question	Responses
Self-rated health	1) In general, would you say you health is..?	1) Likert scale (1-5) 1 = poor 2 = fair 3 = good 4 = very good 5 = excellent
HIV health status	1) Are you currently taking combination HIV drug therapy to treat your HIV-infection?	1)Yes/No
	2) Was the result of your most recent viral load test detectable?	2)Yes/No
	3) What was the count of your most recent CD4 T-cell?	3)Number (cells)
Drug Use	1) In the last 30 days, have you injected any drugs? By injected we mean shot up.	1) Yes/No
	2) How many times have you injected any drug in the last 30 days?	2) Number (0 to 996) = times

Communication with HCPs

1. I do not discuss sex with my primary healthcare provider because it is a private matter.	Likert scale (1-7)
2. During my office visits, my primary healthcare provider and I usually talk about the risk of my transmitting HIV to others.	Likert scale (1-7)
3. The subject of using condoms never comes up during my regular HIV care visits.	Likert scale (1-7)

Satisfaction with HCPs

Satisfaction Questions	**Responses**
1. I am satisfied with the medical services I received at this clinic.	Likert scale (1-7)
2. I am not satisfied with the social support services I receive at this clinic.	Likert scale (1-7)
3. I am satisfied with the HIV prevention services that I receive from the staff at this clinic.	Likert scale (1-7)

Sexual Behavior

Sexual Behavior Questions	**Responses**
1) In the last 6 months: How many times did you have had vaginal sex with your HIV-negative partner(s)? This would be with or without a condom and whether or not you ejaculated.	Number (1 – 996) = times
How many of these times was a condom used?	Number (1 – 996) = times

2) How many times did you have vaginal sex with your HIV-positive partner(s)? This would be with or without a condom and whether or not you ejaculated. How many of these times was a condom used?	Number (1 – 996) = times Number (1 – 996) = times
3) In the last 6 months: How many times did you have vaginal sex with your HIV-negative partner(s)? This would be with or without a condom and whether or not you ejaculated. How many of these times was a condom used?	Number (1 – 996) = times Number (1 – 996) = times
4) In the last 6 months: How many times did you have anal sex with your HIV+ positive partner(s)? This would be with or without a condom and whether or not you ejaculated. How many of these times was a condom used?	Number (1 – 996) = times Number (1 – 996) = times
5) In the last 6 months: How many times did you have anal sex with your HIV-negative partner(s)? This would be with or without a condom and whether or not you ejaculated. How many of these times was a condom used?	Number (1 – 996) = times Number (1 – 996) = times
6) In the last 6 months: How many times did you have anal sex with this/these partner(s) whose status you were not sure of? This would be with or without a condom and whether or not you ejaculated. How many of these times was a condom used?	Number (1 – 996) = times Number (1 – 996) = times

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